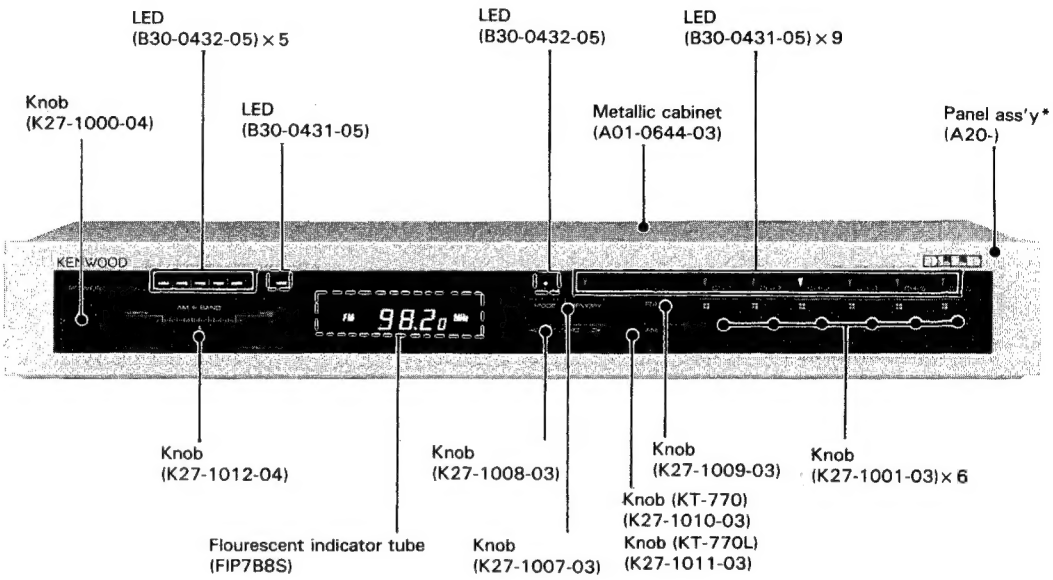
SERVICE MANUAL

KENWOOD

KT-770
KT-770/L

QUARTZ SYNTHESIZER TUNER



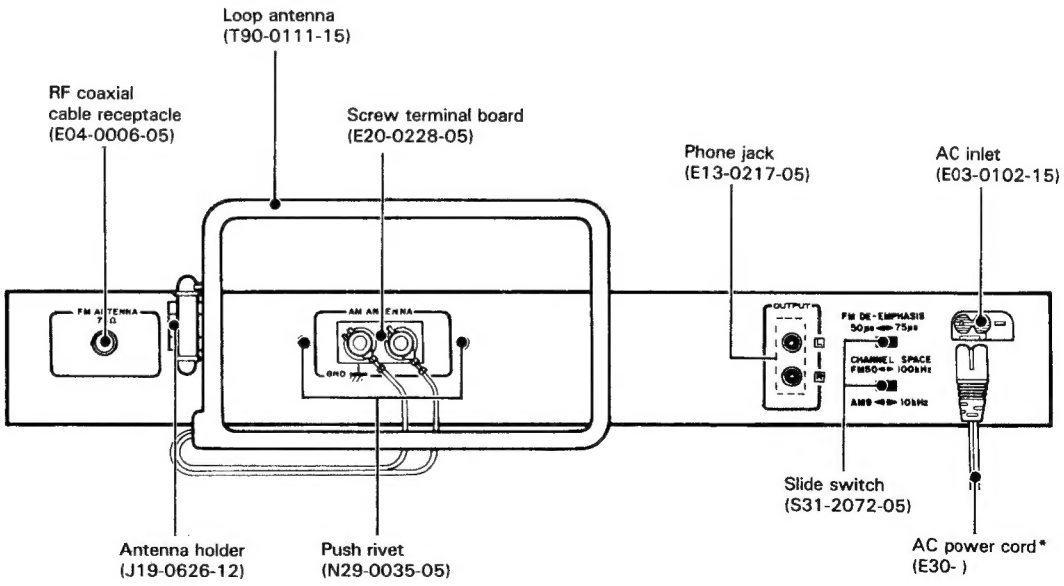


Photo is KT-770.

*Refer to Parts List on page 17.

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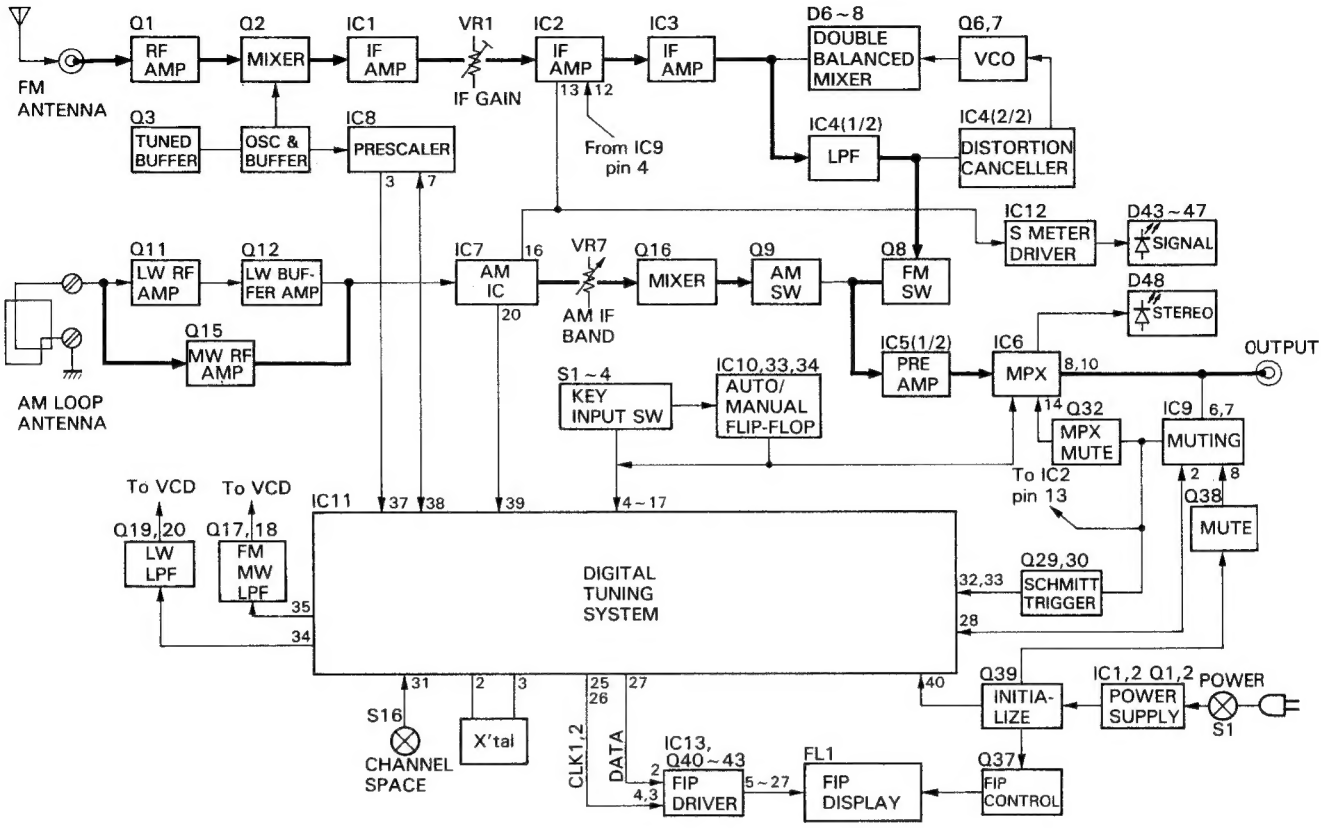
BLCK DIAGRAM/CIRCUIT DESCRIPTION

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

1. Direct Linear Loop Detector (DLLD)

This DLLD circuit is an advanced Phased Locked Loop (PLL) detector. First, a brief explanation of a PLL detector is written below. Block diagram of PLL detector is shown in Fig. 1.

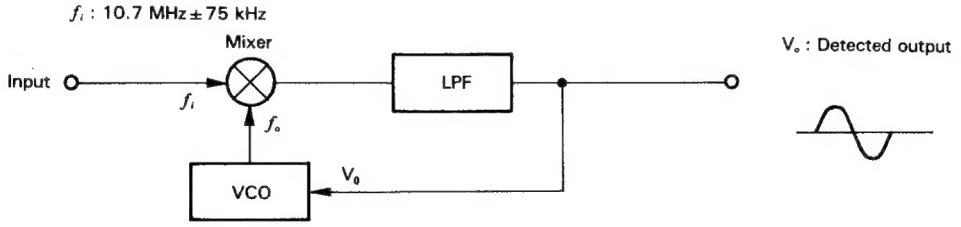


Fig. 1 Block diagram of PLL detector

PLL detector is a closed circuit containing a mixer, LPF, VCO. This closed circuit is designed so that the phase of the oscillator frequency f_o (output of VCO) coincide with the input frequency f_i. The input frequency f_i changes between 10.7 MHz±75 kHz every moment and the oscillator frequency f_o also changes to coincide to the phase of the input frequency f_i. If the phase coincides, the frequency also coincides, meaning the same waveform is obtained at the output of VCO (f_o). The relationship between the voltage applied to the VCO circuit (V_o) and the output frequency f_o is shown in Fig. 2. From this diagram, you will know that if the characteristic curve is linear, the waveform of f_o will be similar to the waveform of V_o. Since f_i and f_o is equal in a PLL circuit, f_i and V_o will be a similar waveform. Hence, the frequency variation will be converted to a voltage variation. This is the detected output. In a normal PLL detector, linear relationship between f_o and V_o can not be obtained. The dotted line in Fig. 2 shows the actual non-linear relationship which is the cause of the distortion. The reason of this non-linearity is the relationship between the applied voltage and the capacitance of the variable capacitance diode.

In this DLLD circuit, we added a circuit having an anti-phase characteristic curve to compensate the non-linearity. Detailed explanation is written in the following.

CIRCUIT DESCRIPTION

Block diagram of DLLD circuit is shown in Fig. 3. The Signal-to-Noise (S/N) ratio depends on the performance of the phase detector and the VCO. In the DLLD circuit, balanced-type phase detector using 4 diodes and tuned-type VCO using variable capacitance diodes and a coil to improve the S/N ratio. Also by adding a compensating circuit for the non-linearity of the variable capacitance diode, the DLLD circuit improved both the S/N and the linearity. The actual circuit of the phase detector and the voltage controlled oscillator is shown in Fig. 4 and 5.

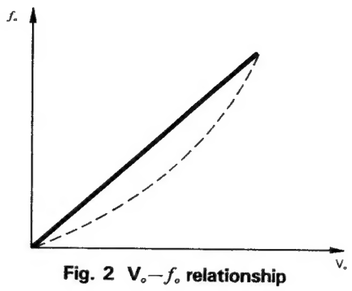


Fig. 2 V_o—f_o relationship

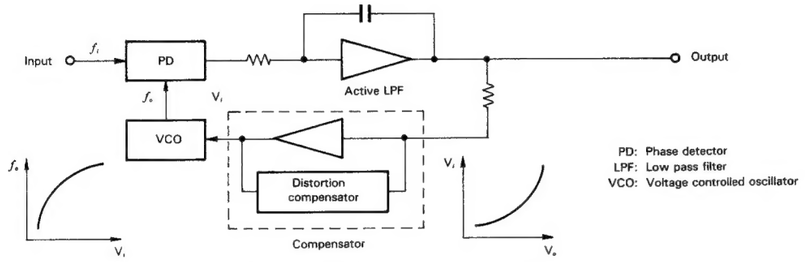


Fig. 3 Block diagram of DLLD circuit

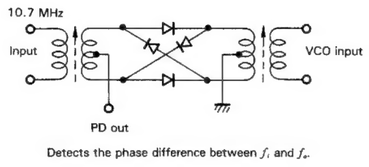
The actual circuit of the distortion compensator is shown in Fig. 6. The circuitry surrounded by the dotted line, consisting of two diodes and resistors, does this job. The distortion generated from the PLL detector is mainly due to the non-linearity of the Voltage-to-Frequency characteristic of the VCO.

Most of this distortion is the second harmonic distortion. This distortion varies according to the various characteristic curves of voltage-to-capacitance of the variable capacitance diode in the VCO circuit. The distortion compensator is employed to absorb this various voltage-to-capacitance characteristics.

Trimming potentiometer VR1 is adjusted so that when the distortion of the VCO is an in-phase component to the basic wave, the amplitude of the demodulated signal is applied more to either one of the D1 or D2 and when it is an anti-phase component to the basic wave, the amplitude of the demodulated signal is applied more to the other diode.

This means that the distortion compensator generates the anti-phase distortion to cancel the distortion generated by the variable capacitance diode, enabling to obtain a distortion free demodulated signal at the output.

This is how this DLLD circuit contribute to improve S/N ratio and total harmonic distortion to 104 dB or more and 0.001% or less respectively.



Detects the phase difference between f_i and f_o.

Fig. 4

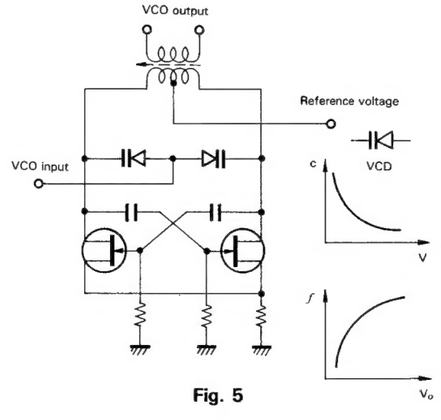


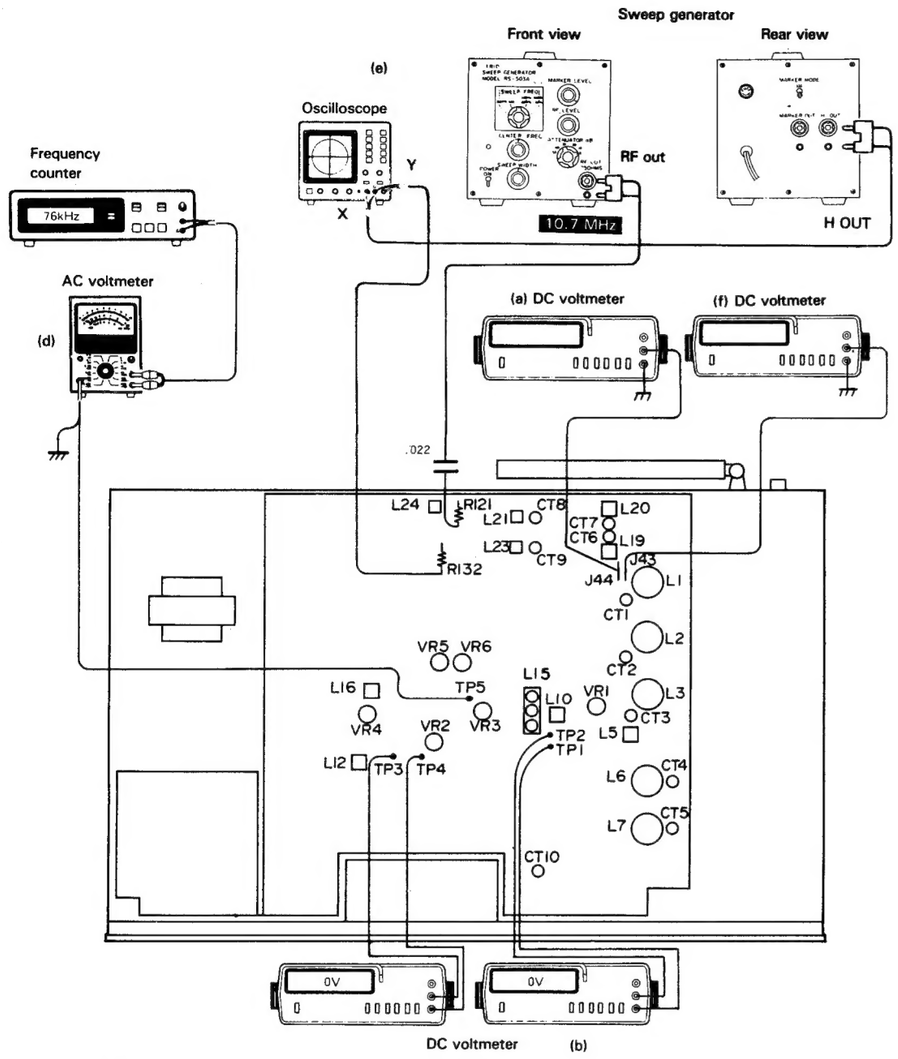
Fig. 5

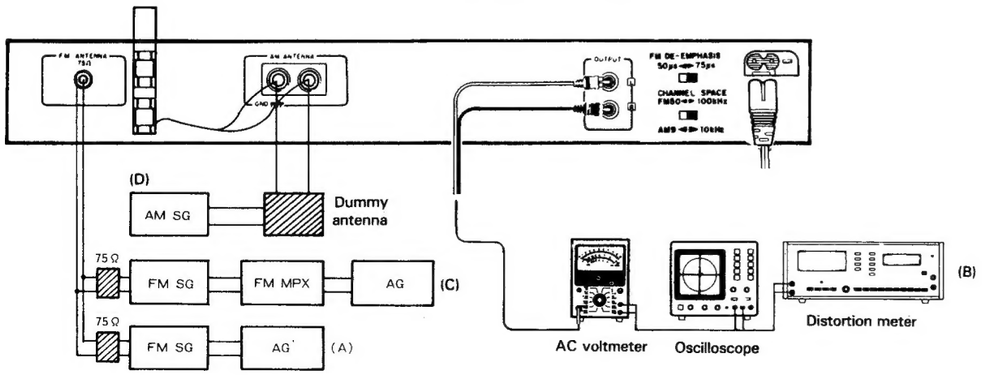
CIRCUIT DESCRIPTION

Semcon-ductor	Usage	Description
IC1	FM IF Amp	
IC2	FM IF System	IF amp, S-meter driver, Muting signal (Stop signal) output
IC3	FM IF Amp	Works as a buffer and an amplifier between IC2 and the double balanced mixer.
IC4	PLL Detector	LPF, Detected output adjustment and distortion canceller circuit.
IC5	MPX Preamp	IC5 (1/2) Amplification of FM detected output or AM demodulated ouptut.
IC6	MPX	Stero demodulation, Muting, VCO stop (AM), Forced MONO.
IC7	AM	RF Vcc is cut in FM mode. S meter ouptut is used as NARROW demodulated output.
IC8	FM Prescaler	Divides FM OSC frequency.
IC9	Muting	Output grounding type. CPU mute, Power ON/OFF mute, FM IF mute, AM S-meter mute.
IC10	AUTO STEREO/ MANUAL MONO SW	T-type flip-flop. The state is maintained when POWER is turned OFF by C124 and 125.
IC11	Digital Tuning System	Programmable counter for FM, AM (MW), LW. Station memory, Reference oscillator (7.2 MHz), Phase comparator, Display driver etc.
IC12	S-meter Driver	LED ID≒15 mA
IC13	FIP Driver	
Q1	FM RF Amp	
Q2	FM Mixer	
Q3	Buffer Amp	Buffer amp between the oscillator and the mixer amp.
Q4	FM OSC	
Q5	Buffer amp	Buffer amp between the oscillator and the prescaler.
Q6, 7	Oscillator (10.7 MHz)	10.7 MHz VCO for PLL detector.
Q8	FET SW	ON when FM is selected.
Q9	FET SW	On when AM (MW, LW) is selected.
Q10	MONO SW	Switches the mode to MONO by detecting the S-meter level.
Q11	LW RF Amp	
12	LW Buffer Amp	
Q13	FET SW	ON when LW is selected.
Q14	FET SW	ON when MW is selected.
Q15	MW RF Amp	

Semcon-ductor	Usage	Description
Q16	Mixer	When AM is selected, WIDE and NARROW output is mixed.
Q17, 18	FM MW LPF	LPF for variable capacitance diode of FM, MW circuit.
Q19, 20	LW LPF	LPF for variable capacitance diode of LW circuit.
Q21	LW SW	When LW is selected, feeds power to LW circuit.
Q22	LW Control	
Q23	MW SW	When MW is selected, feeds power to LW circuit.
Q24	MW Control	
Q25	FM SW	When FM is selected, feeds power to FM circuit.
Q26	FM Control	
Q27, 28	Muting Control	ON when power is turned ON and MUTE signal of IC11 is "H".
Q29, 30	Schmitt Triger	AM S-meter output is inut to Q29. AM S-meter output is output and FM S-meter output is input to Q30.
Q31	SW	ON when MUTE signal of IC11 is "H" when power is turned ON, when IF mute signal is "H", when S-meter is "L".
Q32	SW	Same as Q31. For MPX muting signal.
Q33, 34	Current Buffer	Current buffer and current outflow prevention when backed up by the battery.
Q35	LED driver	LW LED driver.
Q36	7.2 MHz OSC	When LW is selected, this OSC is activated to feed to the reference frequency in IC11 to adjust the center frequency of IF.
Q37	Display Control	FIP display control. When power is turned off, Q37 is ON.
Q38	Muting Control	ON when power is turned OFF and muting signal from IC9 is "L".
Q39	INH Control	Reset signal for IC11. The pulse rises or falls at power ON or OFF.
Q40	FIP Driver	For display of 5 at 10 kHz digit.
Q41	FIP Driver	For display of 0 at 10 kHz digit.
Q42	FIP Driver	For AM, kHz display on FIP.
Q43	FIP Driver	For FM, MHz display on FIP.

SYSTEM CONNECTIONS





ADJUSTMENT

ADJUSTMENT (KT-770) **For adjustments of KT-770L, refer to P.9.**

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION (KT-770)		Unless otherwise specified, the individual switches should be set as follows: SELECTOR: FM MODE: AUTO					
1	**BAND EDGE (1)**	—	Connect a DC voltmeter to J44.	87.5 MHz	L7	7.5 V	(a)
2	**BAND EDGE (2)**	—	Connect a DC voltmeter to J44.	108.0 MHz	CT5	23.0 V	(a)
		Repeat alignments 1 and 2 several times.					
3	**DETECTOR (1)**	(A) 98.0 MHz 0 dev 100 dB (ANT input)	Connect a DC voltmeter between TP1 and 2.	98.0 MHz	L10	Confirm that voltage changes to both + and − direction. Then adjust to 0 V.	(b)
4	**DETECTOR (2)**	(A) 98.0 MHz 0 dev 100 dB (ANT input)	Connect a DC voltmeter between TP3 and 4.	98.0 MHz	L12	Confirm that voltage changes to both + and − direction. Then adjust to 0 V.	(c)
5	**RF ALIGNMENT (1)**	(A) 90.0 MHz 1 kHz, ±75 kHz dev 60 dB (ANT input)	(B)	MODE: MONO 90.0 MHz	L1, 2, 3, 6	Maximum amplitude and symmetry of the oscilloscope display.	
6	**RF ALIGNMENT (2)**	(A) 106.0 MHz 1 kHz, ±75 kHz dev 60 dB (ANT input)	(B)	MODE: MONO 106.0 MHz	CT1, 2, 3, 4	Maximum amplitude and symmetry of the oscilloscope display.	
		Repeat alignments 5 and 6 several times.					
7	**IF GAIN**	(A) 98.0 MHz 0 dev 4 dB (ANT input)	—	98.0 MHz	VR1	Adjust VR1 so that SIGNAL LED goes off. Then, adjust VR1 and stop at the point where LED "1" goes on.	
8	**VCO**	(A) 98.0 MHz 0 dev 60 dB (ANT input)	Connect a frequency counter to TP5 via an AC voltmeter.	98.0 MHz	VR3	76.00 KHz	(d)
9	**PILOT CANCELLER (1)**	(C) 98.0 MHz 0 dev Selector: L or R Pilot: ±6.75 kHz dev 60 dB (ANT input)	(B)	98.0 MHz	VR4	Minimum 19 kHz output.	
10	**PILOT CANCELLER (2)**	(C) 98.0 MHz 0 dev Selector: L or R Pilot: ±6.75 kHz dev 60 dB (ANT input)	(B)	98.0 MHz	L16	Same output (L, R)	
		Repeat alignments 9 and 10 several times.					
11	**DISTORTION (STEREO) (1)**	(C) 98.0 MHz 1 kHz, ±68.25 kHz dev Selector: L or R Pilot: ±6.75 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	VR2	Minimum distortion.	
12	**DISTORTION (STEREO) (2)**	(C) 98.0 MHz 1 kHz, ±68.25 kHz dev Selector: L Pilot: ±6.75 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	L5	Minimum distortion.	
13	**SEPARATION (1)**	(C) 98.0 MHz 1 kHz, ±68.25 kHz dev Selector: L Pilot: ±6.75 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	VR6 (L)	Minimum crosstalk.	
14	**SEPARATION (2)**	(C) 98.0 MHz 10 kHz, ±68.25 kHz dev Selector: L Pilot: ±6.75 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	L15 (Yellow core only)	Minimum crosstalk.	
		Repeat alignments 13 and 14 several times.					

ADJUSTMENT/REGLAGE

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
15	SEPARATION (3)	(C) 98.0 MHz 1 kHz, ±68.25 kHz dev Selector: R Pilot: ±6.75 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	VR5 (R)	Minimum crosstalk	
AM SECTION (KT-770)	Keep the AM loop antenna installed. SELECTOR: AM AM IF BAND: WIDE						
(1)	BAND EDGE (1)	—	Connect a DC voltmeter to J44.	600 kHz (603 kHz)	L23	2.5 V	(a)
(2)	BAND EDGE (2)	—	Connect a DC voltmeter to J44.	1600 kHz (1602 kHz)	CT9	20.0 V	(a)
Repeat alignments (1) and (2) several times							
(3)	RF ALIGNMENT (1)	(D) 630 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 630 kHz	L19	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	RF ALIGNMENT (2)	(D) 1440 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 1440 kHz	CT6	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (3) and (4) several times.							
(5)	IF TRANSFORMER	Sweep generator: 10.7 MHz Connect RF OUT of sweep generator to pin 5 of IC7 via 0.022μF capacitor.	Connect H OUT of sweep generator and H (or X) terminal of the oscilloscope. Connect V (or Y) terminal of the oscilloscope to the junction of R132 and R134.	1000 kHz (999 kHz)	L24	Maximum amplitude and symmetry of the oscilloscope display.	(e)

REGLAGE (KT-770) **Pour réglage de KT-770L, se référer à P.10.**

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF (KT-770)	Sauf en cas d'indications spéciales, régler chaque commutateur comme suit: SELECTOR: FM MODE: AUTO						
1	BORD DE BANDE (1)	—	Connecter un voltmètre CC au J44.	87,5 MHz	L7	7,5 V	(a)
2	BORD DE BANDE (2)	—	Connecter un voltmètre CC au J44.	108,0 MHz	CT5	23,0 V	(a)
Répéter les alignements 1 et 2 plusieurs fois.							
3	DETECTEUR (1)	(A) 98,0 MHz 0 dév 100 dB (Entrée ANT)	Connecter un voltmètre CC entre les TP1 et 2.	98,0 MHz	L10	Affemir que la tension change au la direction von + et −. Alors ajuster au 0 V.	(b)
4	DETECTEUR (2)	(A) 98,0 MHz 0 dév 100 dB (Entrée ANT)	Connecter un voltmètre CC entre les TP3 et 4.	98,0 MHz	L12	Affemir que la tension change au la direction von + et −. Alors ajuster au 0 V.	(c)
5	ALIGNEMENT HT (1)	(A) 90,0 MHz 1 kHz. ±75 kHz dév 60 dB (Entrée ANT)	(B)	MODE: MONO 90,0 MHz	L1. 2. 3. 6	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
6	ALIGNEMENT HT (2)	(A) 106,0 MHz 1 kHz. ±75 kHz dév 60 dB (Entrée ANT)	(B)	MODE: MONO 106,0 MHz	CT1. 2. 3. 4	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
Répéter les alignements 5 et 6 plusieur fois.							
7	FI GAIN	(A) 98,0 MHz 0 dév 4 dB (Entrée ANT)	—	98,0 MHz	VR1	Ajuster VR1 que SIGNAL LED est non allume. Alors, ajuster VR1 et arrêter le mouvement de VR1 au moment où le LED "1" s'allume.	

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG
8	**OSCILLATEUR CONTROLE PAR LA TENSION**	(A) 98,0 MHz 0 dév 60 dB (Entrée ANT)	Connecter un compteur de fréquence à TP5 par l'intérmediair d'un voltmètre CA.	98,0 MHz	VR3	76,00 kHz	(d)
9	**CIRCUIT SUPPRESSION DE SIGNAL PILOTE (1)**	(C) 98,0 MHz 0 dév Selection: L ou R Signal pilote: ±6,75 kHz dév 60 dB (Entrée ANT)	(B)	98,0 MHz	VR4	19 kHz sortie minimale.	
10	**CIRCUIT SUPPRESSION DE SIGNAL PILOTE (2)**	(C) 98,0 MHz 0 dév Selection: L ou R Signal pilote: ±6,75 kHz dév 60 dB (Entrée ANT)	(B)	98,0 MHz	L16	Sortie même (L, R)	
	Répéter les alignements 9 et 10 plusieurs fois.						
11	**DISTORSION (STEREO) (1)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz dév Selection: L ou R Signal pilote: ±6,75 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	VR2	Distorsion minimale.	
12	**DISTORSION (STEREO) (2)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz dév Selection: L ou R Signal pilote: ±6,75 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	L5	Distorsion minimale.	
13	**SEPARATION (1)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz dév Selection: L Signal pilote: ±6,75 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	VR6 (L)	Diaphonie minimale.	
14	**SEPARATION (2)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz dév Selection: L Signal pilote: ±6,75 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	L15 (Le noyau jaune seulement)	Diaphonie minimale.	
	Répéter les alignements 13 et 14 plusieur fois.						
15	**SEPARATION (3)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz dév Selection: R Signal pilote: ±6,75 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	VR5 (R)	Diaphonie minimale.	
SECTION MA (KT-770)	Laisser l'antenne boucle MA installée. SELECTOR: AM AM IF BAND: WIDE						
(1)	**BORD DE BANDE (1)**	—	Connecter un voltmètre CC au J44.	600 kHz (603 kHz)	L23	2,5 V	(a)
(2)	**BORD DE BANDE (2)**	—	Connecter un voltmètre CC au J44.	1600 kHz (1602 kHz)	CT9	20,0 V	(a)
	Répéter les alignements (1) et (2) plusieur fois.						
(3)	**ALIGNEMENT HT (1)**	(D) 630 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 630 kHz	L19	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	

REGLAGE/ABGLEICH

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
(4)	**ALIGNEMENT HT (2)**	(D) 1440 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 1440 kHz	CT6	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
Répéter les alignements (3) et (4) plusieur fois.							
(5)	**TRANSFORMATEUR FI**	Générateur de balayage: 10,7 MHz Connecter la borne RF OUT au générateur de balayage au la broche 5 au IC7 par le 0,022μF condensateur.	Connecter la borne H OUT au générateur de balayage à la borne H (ou X) de l'oscilloscope. Connecter la borne V (ou Y) de l'oscilloscope à la jonction au R132 et R134.	1000 kHz (999 kHz)	L24	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	(e)

ABGLEICH (KT-770) **Für abgleich von KT-770L, schlagen Sie P.12 nach.**

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG (KT-770) Außer wenn anders angegeben, die verschiedenen Schalter wie folgt einstellen: SELECTOR: FM MODE: AUTO							
1	**BANDKANTE (1)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	87,5 MHz	L7	7,5 V	(a)
2	**BANDKANTE (2)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	108,0 MHz	CT5	23,0 V	(a)
Abstimmungen 1 und 2 mehrere Male wiederholen.							
3	**DETEKTOR (1)**	(A) 98,0 MHz 0 Hub 100 dB (ANT-Eingang)	Einen Gleich-spannungsmesser zwischen TP1 und 2 anschließen.	98,0 MHz	L10	Bestätigen so daß die Spannung beide richtung zu + und − ändert. Dann zu 0 V einstellen.	(b)
4	**DETEKTOR (2)**	(A) 98,0 MHz 0 Hub 100 dB (ANT-Eingang)	Einen Gleich-spannungsmesser zwischen TP3 und 4 anschließen.	98,0 MHz	L12	Bestätigen so daß die Spannung beide richtung zu + und − ändert. Dann zu 0 V einstellen.	(c)
5	**HF-ABGLEICH (1)**	(A) 90,0 MHz 1 kHz. ±75 kHz Hub 60 dB (ANT-Eingang)	(B)	MODE: MONO 90,0 MHz	L1, 2, 3, 6	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
6	**HF-ABGLEICH (2)**	(A) 106,0 MHz 1 kHz. ±75 kHz Hub 60 dB (ANT-Eingang)	(B)	MODE: MONO 106,0 MHz	CT1, 2, 3, 4	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen 5 und 6 mehrere Male wiederholen.							
7	**ZF-VERSTÄRKUNG**	(A) 98,0 MHz 0 Hub 4 dB (ANT-Eingang)	—	98,0 MHz	VR1	Den Pegel widerstand VR1 so einstellen, daß der SIGNAL LED anzeiger nicht leuchtet. Dann der Pegel widerstand aufdrehen, und dem VR1 Halt geben wobei den LED "1" anzeiger leuchtet wird.	
8	**SPANNUNGS-GEREGELTER OSZILLATOR**	(A) 98,0 MHz 0 Hub 60 dB (ANT-Eingang)	Einen Frequenz-messer an TP5 über einen Wechselspannungs-messer anschließen.	98,0 MHz	VR3	76,00 kHz	(d)
9	**PILOT-LÖSCHER (1)**	(C) 98,0 MHz 0 Hub Wähler: L oder R Pilotten: ±6,75 kHz Hub 60 dB (ANT-Eingang)	(B)	98,0 MHz	VR4	19 kHz Minimaler Ausgang.	

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	TUNER EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
10	**PILOT-LÖSCHER (2)**	(C) 98,0 MHz 0 Hub Wähler: L oder R Pilotten: ±6,75 kHz Hub 60 dB (ANT-Eingang)	(B)	98,0 MHz	L16	Selbe Ausgang. (L, R)	
Abstimmungen 9 und 10 mehrere Male wiederholen.							
11	**KLIRRFAKTOR (STEREO) (1)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz Hub Wähler: L oder R Pilotten: ±6,75 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	VR2	Minimale Klirrfaktor.	
12	**KLIRRFAKTOR (STEREO) (2)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz Hub Wähler: L oder R Pilotten: ±6,75 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	L5	Minimale Klirrfaktor.	
13	**STEREO KANAL TRENNUNG (1)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz Hub Wähler: L oder R Pilotten: ±6,75 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	VR6 (L)	Minimales Übersprechen.	
14	**STEREO KANAL TRENNUNG (2)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz Hub Wähler: L oder R Pilotten: ±6,75 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	L15 (Nur gelber Kern)	Minimales Übersprechen.	
Abstimmungen 13 und 14 mehrere Male wiederholen.							
15	**STEREO KANAL TRENNUNG (3)**	(C) 98,0 MHz 1 kHz. ±68,25 kHz Hub Wähler: L oder R Pilotten: ±6,75 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	VR5 (R)	Minimales Übersprechen.	
MW-EMPFANGSABTEILUNG (KT-770)		Die MW-Rahmenantenne angebracht lassen. SELECTOR: AM AM IF BAND: WIDE					
(1)	**BANDKANTE (1)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	600 kHz (603 kHz)	L23	2,5 V	
(2)	**BANDKANTE (2)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	1600 kHz (1602 kHz)	CT9	20,0 V	
Abstimmungen (1) und (2) mehrere Male wiederholen.							
(3)	**HF-ABGLEICH (1)**	(D) 630 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 630 kHz	L19	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	**HF-ABGLEICH (2)**	(D) 1440 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 1440 kHz	CT6	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
Abstimmungen (3) und (4) mehrere Male wiederholen.							
(5)	**ZF-ÜBERTRAGER**	ZF-Frequenz: 10,7 MHz Die RF-OUT-Klemme des Ablenk-generatores und Klemme 5 von IC7 über 0,022μF Kondensator anschließen.	Die H-OUT-Klemme des Ablenkgeneratores und die H (oder X)-Klemme des Oszillo-skopes anschließen. Die V (oder Y)-Klemme des Oszilloskopes zu verbindung von R132 und R134 anschließen.	1000 kHz (999 kHz)	L24	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	(e)

ADJUSTMENT

ADJUSTMENT (KT-770L)

NO.	ITEM	INPUT SETTING	OUTPUT SETTING	TUNER SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION (KT-770L)		Unless otherwise specified, the individual switches should be set as follows: SELECTOR: FM MODE: AUTO					
1	**BAND EDGE (1)**	—	Connect a DC voltmeter to J44.	87.5 MHz	L7	7.5 V	(a)
2	**BAND EDGE (2)**	—	Connect a DC voltmeter to J44.	108.0 MHz	CT5	23.0 V	(a)
		Repeat alignments 1 and 2 several times.					
3	**DETECTOR (1)**	(A) 98.0 MHz 0 dev 60 dB (ANT input)	Connect a DC voltmeter between TP1 and 2.	98.0 MHz	L10	Confirm that voltage changes to both + and − direction. Then adjust to 0 V.	(b)
4	**DETECTOR (2)**	(A) 98.0 MHz 0 dev 60 dB (ANT input)	Connect a DC voltmeter between TP3 and 4.	98.0 MHz	L12	Confirm that voltage changes to both + and − direction. Then adjust to 0 V.	(c)
5	**RF ALIGNMENT (1)**	(A) 90.0 MHz 1 kHz, ±40 kHz dev 60 dB (ANT input)	(B)	MODE: MONO 90.0 MHz	L1, 2, 3, 6	Maximum amplitude and symmetry of the oscilloscope display.	
6	**RF ALIGNMENT (2)**	(A) 106.0 MHz 1 kHz, ±40 kHz dev 60 dB (ANT input)	(B)	MODE: MONO 106.0 MHz	CT1, 2, 3, 4	Maximum amplitude and symmetry of the oscilloscope display.	
		Repeat alignments 5 and 6 several times.					
7	**IF GAIN**	(A) 98.0 MHz 0 dev 4 dB (ANT input)	—	98.0 MHz	VR1	Adjust VR1 so that SIGNAL LED goes off. Then, adjust VR1 and stop at the point where LED "1" goes on.	
8	**VCO**	(A) 98.0 MHz 0 dev 60 dB (ANT input)	Connect a fequency counter to TP5 via an AC voltmeter.	98.0 MHz	VR3	76.00 kHz	(d)
9	**PILOT CANCELLER (1)**	(C) 98.0 MHz 0 dev Selector: L or R Pilot: ±6 kHz dev 60 dB (ANT input)	(B)	98.0 MHz	VR4	Minimum 19 kHz output.	
10	**PILOT CANCELLER (2)**	(C) 98.0 MHz 0 dev Selector: L or R Pilot: ±6 kHz dev 60 dB (ANT input)	(B)	98.0 MHz	L16	Same output (L, R)	
		Repeat alignments 9 and 10 several times.					
11	**DISTORTION (STEREO) (1)**	(C) 98.0 MHz 1 kHz, ±40 kHz dev Selector: L or R Pilot: ±6 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	VR2	Minimum distortion.	
12	**DISTORTION (STEREO) (2)**	(C) 98.0 MHz 1 kHz, ±40 kHz dev Selector: L Pilot: ±6 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	CT10	Minimum distortion.	
13	**DISTORTION (STEREO) (3)**	(C) 98.0 MHz 1 kHz, ±40 kHz dev Selector: L Pilot: ±6 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	L5	Minimum distortion.	
14	**SEPARATION (1)**	(C) 98.0 MHz 1 kHz, ±40 kHz dev Selector: L Pilot: ±6 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	VR6 (L)	Minimum crosstalk.	

ADJUSTMENT/REGLAGES

NO.	ITEM	INPUT SETTING	OUTPUT SETTING	TUNER SETTING	ALIGNMENT POINTS	ALIGN FOR	FIG.
15	**SEPARATION (2)**	(C) 98.0 MHz 10 kHz, ±40 kHz dev Selector: L Pilot: ±6 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	L15 (Yellow core only)	Minimum crosstalk.	
Repeat alignments 14 and 15 several times.							
16	**SEPARATION (3)**	(C) 98.0 MHz 1 kHz, ±40 kHz dev Selector: R Pilot: ±6 kHz dev 80 dB (ANT input)	(B)	98.0 MHz	VR5 (R)	Minimum crosstalk.	
AM-MW SECTION (KT-770L) Keep the AM loop antenna installed. SELECTOR: MW AM IF BAND: WIDE							
(1)	**BAND EDGE MW (1)**	—	Connect a DC voltmeter to J44.	600 kHz (603 kHz)	L23	2.5 V	(a)
(2)	**BAND EDGE MW (2)**	—	Connect a DC voltmeter to J44.	1600 kHz (1602 kHz)	CT9	20.0 V	(a)
Repeat alignments (1) and (2) several times.							
(3)	**RF ALIGNMENT MW (1)**	(D) 630 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 630 kHz	L19	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	**RF ALIGNMENT MW (2)**	(D) 1440 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 1440 kHz	CT6	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (3) and (4) several times.							
(5)	**IF TRANSFORMER**	If frequency: 10.7 MHz Connect RF OUT of sweep generator to pin 5 of IC7 via 0.022μF capacitor.	Connect H OUT of sweep generator and H (or X) terminal of the oscilloscope. Connect V (or Y) terminal of the oscilloscope to the junction of R132 and R134.	1000 kHz (999 kHz)	L24	Maximum amplitude and symmetry of the oscilloscope display.	(e)
AM-LW SECTION SELECTOR: LW AM IF BAND: WIDE							
(6)	**BAND EDGE LW (1)**	—	Connect a DC voltmeter to J43.	153 kHz	L21	3.5 V	(f)
(7)	**BAND EDGE LW (2)**	—	Connect a DC voltmeter to J43.	360 kHz	CT8	22.0 V	(f)
Repeat alignments (6) and (7) several times.							
(8)	**RF ALIGNMENT LW (1)**	(D) 173 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 173 kHz	L20	Maximum amplitude and symmetry of the oscilloscope display.	
(9)	**RF ALIGNMENT LW (2)**	(D) 323 kHz 400 Hz, 30% mod	(B)	AM IF BAND: NARROW 323 kHz	CT7	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (8) and (9) several times.							

REGLAGES (KT-770L)

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
SECTION MF (KT-770L) Sauf en cas d'indications spéciales, régler chaque commutateur comme suit: SELECTOR: FM MODE: AUTO							
1	**BORD DE BANDE (1)**	—	Connecter un voltmètre CC au J44.	87,5 MHz	L7	7,0 V	(a)
2	**BORD DE BANDE (2)**	—	Connecter un voltmètre CC au J44.	108,0 MHz	CT5	23,0 V	(a)
Répéter les alignements 1 et 2 plusieurs fois.							

REGLAGES

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
3	**DETECTEUR (1)**	(A) 98,0 MHz 0 dév 60 dB (Entrée ANT)	Connecter un voltmètre CC entre les TP1 et 2.	98,0 MHz	L10	Affemir que la tension change au la direction von + et −. Alors ajuster au 0 V.	(b)
4	**DETECTEUR (2)**	(A) 98,0 MHz 0 dév 60 dB (Entrée ANT)	Connecter un voltmètre CC entre les TP3 et 4.	98,0 MHz	L12	Affemir que la tension change au la direction von + et −. Alors ajuster au 0 V.	(c)
5	**ALIGNEMENT HT (1)**	(A) 90,0 MHz 1 kHz. ±40 kHz dév 60 dB (Entrée ANT)	(B)	MODE: MONO 90,0 MHz	L1. 2. 3. 6	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
6	**ALIGNEMENT HT (2)**	(A) 106,0 MHz 1 kHz. ±40 kHz dév 60 dB (Entrée ANT)	(B)	MODE: MONO 106,0 MHz	CT1. 2. 3. 4	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
Répéter les alignements 5 et 6 plusieur fois.							
7	**FI GAIN**	(A) 98,0 MHz 0 dév 4 dB (Entrée ANT)	—	98,0 MHz	VR1	Ajuster VR1 que SIGNAL LED est non allume. Alors, ajuster VR1 et arrêter le mouvement de VR1 au moment où le LED "1" s'allume.	
8	**OSCILLATEUR CONTROLE PAR LA TENSION**	(A) 98,0 MHz 0 dév 60 dB (Entrée ANT)	Connecter un compteur de fréquence à TP5 par l'intérmediair d'un voltmètre CA.	98,0 MHz	VR3	76,00 kHz	(d)
9	**CIRCUIT SUPPRESSION DE SIGNAL PILOTE (1)**	(C) 98,0 MHz 0 dév Selection: L ou R Signal pilote: ±6 kHz dév 60 dB (Entrée ANT)	(B)	98,0 MHz	VR4	19 kHz sortie minimale.	
10	**CIRCUIT SUPPRESSION DE SIGNAL PILOTE (2)**	(C) 98,0 MHz 0 dév Selection: L ou R Signal pilote: ±6 kHz dév 60 dB (Entrée ANT)	(B)	98,0 MHz	L16	Sortie même (L, R)	
Répéter les alignements 9 et 10 plusieurs fois.							
11	**DISTORSION (STEREO) (1)**	(C) 98,0 MHz 1 kHz. ±40 kHz dév Selection: L ou R Signal pilote: ±6 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	VR2	Distorsion minimale.	
12	**DISTORSION (STEREO) (2)**	(C) 98,0 MHz 1 kHz. ±40 kHz dév Selection: L ou R Signal pilote: ±6 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	CT10	Distorsion minimale.	
13	**DISTORSION (STEREO) (3)**	(C) 98,0 MHz 1 kHz. ±40 kHz dév Selection: L Signal pilote: ±6 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	L5	Distorsion minimale.	
14	**SEPARATION (1)**	(C) 98,0 MHz 1 kHz. ±40 kHz dév Selection: L Signal pilote: ±6 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	VR6 (L)	Diaphonie minimale.	

REGLAGES/ABGLEICH

N°	ITEM	RAGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DU TUNER	POINTS DE L'ALIGNEMENT	ALIGNER POUR	FIG.
15	**SEPARATION (2)**	(C) 98,0 MHz 1 kHz. ±40 kHz dév Selection: L Signal pilote: ±6 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	L15 (Le noyau jaune seulement)	Diaphonie minimale.	
			Répéter les alignements 13 et 14 plusieur fois.				
16	**SEPARATION (3)**	(C) 98,0 MHz 1 kHz. ±40 kHz dév Selection: R Signal pilote: ±6 kHz dév 80 dB (Entrée ANT)	(B)	98,0 MHz	VR5 (R)	Diaphonie minimale.	
SECTION MA-OM (KT-770L)		Laisser l'antenne boucle MA installée. SELECTOR: MW AM IF BAND: WIDE					
(1)	**BORD DE BANDE OM (1)**	—	Connecter un voltmètre CC au J44.	600 kHz (603 kHz)	L23	2,5 V	(a)
(2)	**BORD DE BANDE OM (2)**	—	Connecter un voltmètre CC au J44.	1600 kHz (1602 KHz)	CT9	20,0 V	(a)
			Répéter les alignements (1) et (2) plusieur fois.				
(3)	**ALIGNEMENT HT OM (1)**	(D) 630 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 630 kHz	L19	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(4)	**ALIGNEMENT HT OM (2)**	(D) 1440 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 1440 kHz	CT6	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
			Répéter les alignements (3) et (4) plusieur fois.				
(5)	**TRANSFORMATEUR FI**	Générateur de balayage: 10,7 MHz Connecter la borne RF OUT au générateur de balayage au la broche 5 au IC7 par le 0,022μF condensateur.	Connecter la borne H OUT au générateur de balayage à la borne H (ou X) de l'oscilloscope. Connecter la borne V (ou Y) de l'oscilloscope à la jonction au R132 et R134.	1000 kHz (999 kHz)	L24	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	(e)
SECTION MA-OL (KT-770L)		SELECTOR: LW AM IF BAND: WIDE					
(6)	**BORD DE BANDE OL (1)**	—	Connecter un voltmètre CC au J43.	153 kHz	L21	3,5 V	(f)
(7)	**BORD DE BANDE OL (2)**	—	Connecter un voltmètre CC au J43.	360 kHz	CT8	22,0 V	(f)
			Répéter les alignements (6) et (7) plusieur fois.				
(8)	**ALIGNEMENT HT OL (1)**	(D) 173 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 173 kHz	L20	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
(9)	**ALIGNEMENT HT OL (2)**	(D) 323 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 323 kHz	CT7	Amplitude et symétrie maximale de l'affichage de l'oscilloscope.	
			Répéter les alignements (8) et (9) plusieur fois.				

ABGLEICH (KT-770L)

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANG-EINSTELLUNG	TUNER EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
UKW-EMPFANGSABTEILUNG (KT-770L)		Außer wenn anders angegeben, die verschiedenen Schalter wie folgt einstellen. SELECTOR: FM MODE: AUTO					
1	**BANDKANTE (1)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	87,5 MHz	L7	7,5 V	(a)

ABGLEICH

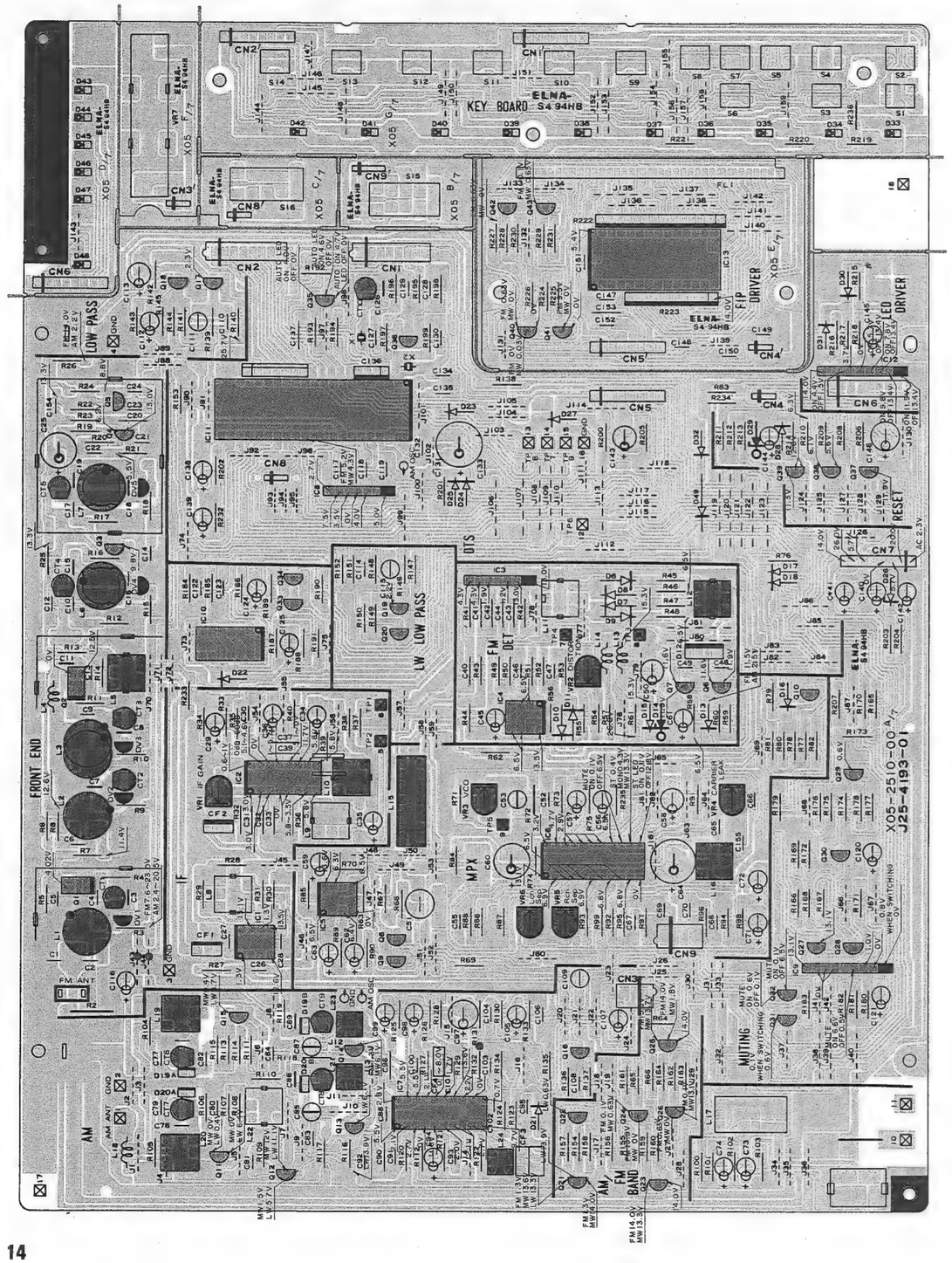
NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANG-EINSTELLUNG	TUNER EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
2	**BANDKANTE (2)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	108,0 MHz	CT5	23,0 V	(a)
	Abstimmungen 1 und 2 mehrere Male wiederholen.						
3	**DETEKTOR (1)**	(A) 98,0 MHz 0 Hub 60 dB (ANT-Eingang)	Einen Gleich-spannungsmesser zwischen TP1 und 2 anschließen.	98,0 MHz	L10	Bestätigen so daß die Spannung beide richtung zu + und — ändert. Dann zu 0 V einstellen.	(b)
4	**DETEKTOR (2)**	(A) 98,0 MHz 0 Hub 60 dB (ANT-Eingang)	Einen Gleich-spannungsmesser zwischen TP3 und 4 anschließen.	98,0 MHz	L12	Bestätigen so daß die Spannung beide richtung zu + und — ändert. Dann zu 0 V einstellen.	(c)
5	**HF-ABGLEICH (1)**	(A) 90,0 MHz 1 kHz. ±40 kHz Hub 60 dB (ANT-Eingang)	(B)	MODE: MONO 90,0 MHz	L1. 2. 3. 6	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
6	**HF-ABGLEICH (2)**	(A) 106,0 MHz 1 kHz. ±40 kHz Hub 60 dB (ANT-Eingang)	(B)	MODE: MONO 106,0 MHz	CT1. 2. 3. 4	Maximal Amplitude und Symmetrie des Oszilloskopbildes.	
	Abstimmungen 5 und 6 mehrere Male wiederholen.						
7	**ZF-VERSTÄRKUNG**	(A) 98,0 MHz 0 Hub 4 dB (ANT-Eingang)	—	98,0 MHz	VR1	Den Pegel widerstand VR1 so einstellen, daß der SIGNAL LED anzeiger nicht leuchtet. Dann der Pegel widerstand aufdrehen, und dem VR1 Halt geben wobei den LED "1" anzeiger leuchtet wird.	
8	**SPANNUNGS-GEREGELTER OSZILLATOR**	(A) 98,0 MHz 0 Hub 60 dB (ANT-Eingang)	Einen Frequenz-messer an TP5 über einen Wechselspannungs-messer anschließen.	98,0 MHz	VR3	76,00 kHz	(d)
9	**PILOT-LÖSCHER (1)**	(C) 98,0 MHz 0 Hub Wähler: L oder R Pilotten: ±6 kHz Hub 60 dB (ANT-Eingang)	(B)	98,0 MHz	VR4	19 kHz Minimaler Ausgang.	
10	**PILOT-LÖSCHER (2)**	(C) 98,0 MHz 0 Hub Wähler: L oder R Pilotten: ±6 kHz Hub 60 dB (ANT-Eingang)	(B)	98,0 MHz	L16	Selbe Ausgang. (L, R)	
	Abstimmungen 9 und 10 mehrere Male wiederholen.						
11	**KLIRRFAKTOR (STEREO) (1)**	(C) 98,0 MHz 1 kHz. ±40 kHz Hub Wähler: L oder R Pilotten: ±6 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	VR2	Minimale Klirrfaktor.	
12	**KLIRRFAKTOR (STEREO) (2)**	(C) 98,0 MHz 1 kHz. ±40 kHz Hub Wähler: L oder R Pilotten: ±6 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	CT10	Minimale Klirrfaktor.	
13	**KLIRRFAKTOR (STEREO) (3)**	(C) 98,0 MHz 1 kHz. ±40 kHz Hub Wähler: L oder R Pilotten: ±6 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	L5	Minimale Klirrfaktor.	
14	**STEREO KANAL TRENNUNG (1)**	(C) 98,0 MHz 1 kHz. ±40 kHz Hub Wähler: L oder R Pilotten: ±6 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	VR6 (L)	Minimales Übersprechen.	

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANG-EINSTELLUNG	TUNER EINSTELLUNG	ABGLEICHE-PUNKTE	ABGLEICHEN FÜR	ABB.
15	**STEREO KANAL TRENNUNG (2)**	(C) 98,0 MHz 1 kHz. ±40 kHz Hub Wähler: L oder R Pilotten: ±6 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	L15 (Nur gelber Kern)	Minimales Übersprechen.	
	Abstimmungen 13 und 14 mehrere Male wiederholen.						
16	**STEREO KANAL TRENNUNG (3)**	(C) 98,0 MHz 1 kHz. ±40 kHz Hub Wähler: L oder R Pilotten: ±6 kHz Hub 80 dB (ANT-Eingang)	(B)	98,0 MHz	VR5 (R)	Minimales Übersprechen.	
	MW-EMPFANGSABTEILUNG (KT-770L) Die MW-Rahmenantenne angebracht lassen. SELECTOR: AM AM IF BAND: WIDE						
(1)	**BANDKANTE MW (1)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	600 kHz (603 kHz)	L23	2,5 V	
(2)	**BANDKANTE MW (2)**	—	Einen Gleich-spannungsmesser zu J44 anschließen.	1600 kHz (1602 kHz)	CT9	20,0 V	
	Abstimmungen (1) und (2) mehrere Male wiederholen.						
(3)	**HF-ABGLEICH MW (1)**	(D) 630 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 630 kHz	L19	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(4)	**HF-ABGLEICH MW (2)**	(D) 1440 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 1440 kHz	CT6	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
	Abstimmungen (3) und (4) mehrere Male wiederholen.						
(5)	**ZF-ÜBERTRAGER**	ZF-Frequenz: 10,7 MHz Die RF-OUT-Klemme des Ablenk-generatores und Klemme 5 von IC7 über 0,022μF Kondensator anschließen.	Die H-OUT-Klemme des Ablenkgeneratores und die H (oder X)-Klemme des Oszillo-skopes anschließen. Die V (oder Y)-Klemme des Oszilloskopes zu verbindung von R132 und R134 anschließen.	1000 kHz (999 kHz)	L24	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	(e)
	LW-EMPFANGSABTEILUNG (KT-770L) SELECTOR: AM AM IF BAND: WIDE						
(6)	**BANDKANTE LW (1)**	—	Einen Gleich-spannungsmesser zu J43 anschließen.	153 kHz	L21	3,5 V	(f)
(7)	**BANDKANTE LW (2)**	—	Einen Gleich-spannungsmesser zu J43 anschließen.	360 kHz	CT8	22,0 V	(f)
	Abstimmungen (6) und (7) mehrere Male wiederholen.						
(8)	**HF-ABGLEICH LW (1)**	(D) 173 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 173 kHz	L20	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
(9)	**HF-ABGLEICH LW (2)**	(D) 323 kHz 400 Hz. 30% mod	(B)	AM IF BAND: NARROW 323 kHz	CT7	Maximale Amplitude und Symmetrie des Oszilloskopbildes.	
	Abstimmungen (8) und (9) mehrere Male wiederholen.						

PC BOARD

TUNER UNIT (X05-2510-11) Component side view

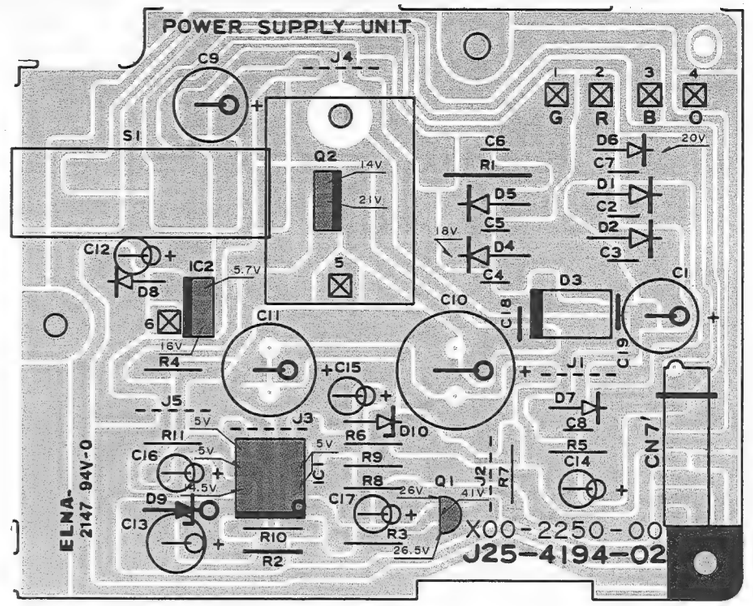


IC11

No.	Voltage	
1	0V	
2	2.2V	
3	2.5V	
4	FM MW	4.4V 0V
5	MW LED	ON 4.2V OFF 0V
6	LW LED	ON 4.2V OFF 1.2V
7	AT LW AUTO	ON 4.9V OFF 3.6V
8	AUTO LED	ON 4.9V OFF 0V
9	UP SW	ON 5.0V OFF 0V
10	DOWN SW	
11	MEMO-RY LED	ON 4.2V OFF 0V
12	CH1-LED	
13	CH2-LED	ON 4.2V OFF 0V
14	CH3-LED	
15	CH4-LED	
16	CH5-LED	
17	CH6-LED	
18	—	
19	—	
20	—	
21	—	

No.	Voltage	
22	0V	
23	—	
24	FM MW	4.9V 0V
25	0V	
26	—	
27	—	
28	—	
29	—	
30	—	
31	FM MW	5.2V 4.3V
32	0V	
33	0V	
34	FM MW	0.9V 0.9V
35		
36	—	
37	—	
38	FM MW	2.8V 0V
39	FM MW	4.8V 2.1V
40	4.75V	
41		
42	0V	

POWER SUPPLY UNIT (X00-2250-00) Component side view

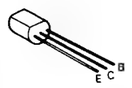


Refer to the schematic diagram for the values of resistors and capacitors.
The PC board drawing is viewing from the side easy to check.

KENWOOD

QUARTZ SYNTHESIZER TUNER

2SA733 (A)
2SA999
2SB764
2SC2320
2SC461
2SC945 (A)
2SD863



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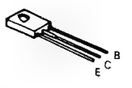

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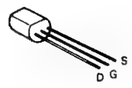
2SK163



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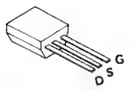

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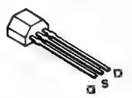

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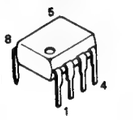

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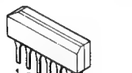

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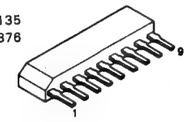
AN6876



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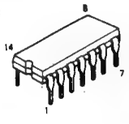

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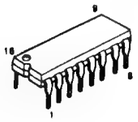

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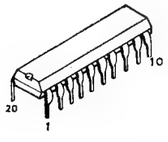
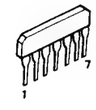


UPC1163H



AN6552

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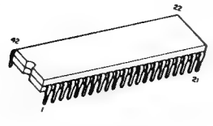

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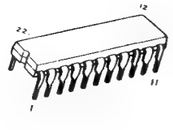

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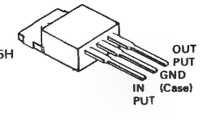

TUNER (X05-2510-11) (A/7)

FM ANT 75Ω

AM ANTENNA

GND

IC1 (1/2)

IC1 (2/2)

IC2 FM IF

IC3

IC4(1/2) DISTORTION CANCEL

IC4(2/2) LPF

IC5 (1/2) PRE AMP

IC5 (2/2) DC AMP

IC6

IC7 AM

IC8 FM PRE SCALER

IC9

IC10 (3/4) (1/4) (2/4) (4/4)

IC11 DIGITAL TUNING SYSTEM

IC12

Q1,2 : 3SK73(GR)
Q3,6,7,15 : 2SK161IY,GR)
Q4 : 2SC461(B,C)
Q5 : 2SK241(GR)
Q8,9 : 2SK105(F,H)
Q16 : 2SK105(H)
Q17 : 2SK105(H,J)
Q18,24,26~32,37,40~43 : 2SC945(A)(Q,P)
Q23,25 : 2SB764(E,F)
Q33,34,38,39 : 2SA733(A)(Q,P
DV1~5 : KV1320-5
D6~9 : MB53A-O
D10,11 : IN60
D12 : KV1226(Y)
D13,15,17,18,21,22,24,25,27,28, : 1S1555 or 1S20
D14 : RD6.2AB2)
D19 : KV1226(X,EF)
D26 : XZ-051
D29 : XZ112

D33,43~47 : 830-0432-05
D34,37~42,48 : 830-0431-05

(X05-2510-11) (G/7)

(X05-2510-11) (F/7)

(X05-2510-11)(C/7)

(X05-2510-11)(B/7)

(X05-2510-11)(D/7)

L ch
R ch
OUTPUT

CAUTION: For continued safety, replace safety c
ponents only with manufacturer's recommended
to parts list). ⚠ Indicates safety critical com
reduce the risk of electric shock, leakage-current

QUARTZ SYNTHESIZER TUNER

KT-770

SPECIFICATIONS

[FM tuner section]

Usable sensitivity	10.8 dBf (0.95 μV)
50 dB quieting sensitivity	
Mono	16.2 dBf (1.8 μV)
Stereo	38.8 dBf (24 μV)
Signal to noise ratio at 65 dBf	
Mono	88 dB
Stereo	76 dB
Total harmonic distortion at 1 kHz	
Mono	0.02%
Stereo	0.04%
Frequency response	20 Hz to 15 kHz ±0.5 dB
Capture ratio	1 dB
Image rejection ratio	82 dB
Spurious rejection ratio	100 dB
IF rejection ratio	110 dB
Alternate channel selectivity	60 dB
AM suppression ratio	70 dB
Stereo separation ratio	66 dB at 1 kHz 45 dB at 50 Hz to 10 kHz
Antenna impedance	75 ohms unbalanced
Output level at 1 kHz, 100% mod	0.6V/1.7 kohms

[AM tuner section]

Usable sensitivity	10 μV
Signal to noise ratio	52 dB
Total harmonic distortion	0.3% (WIDE), 0.8% (NARROW)
Image rejection	40 dB
Output level	0.18V/1.7 kohms

[General]

Power requirements	50/60 Hz 120/220-240V, Switchable
Power consumption	12W
Dimensions	W: 420 mm (16-17/32") H: 64 mm (2-1/2") D: 317 mm (12-1/2")
Weight (Net)	3.4 kg (7.5 lb)

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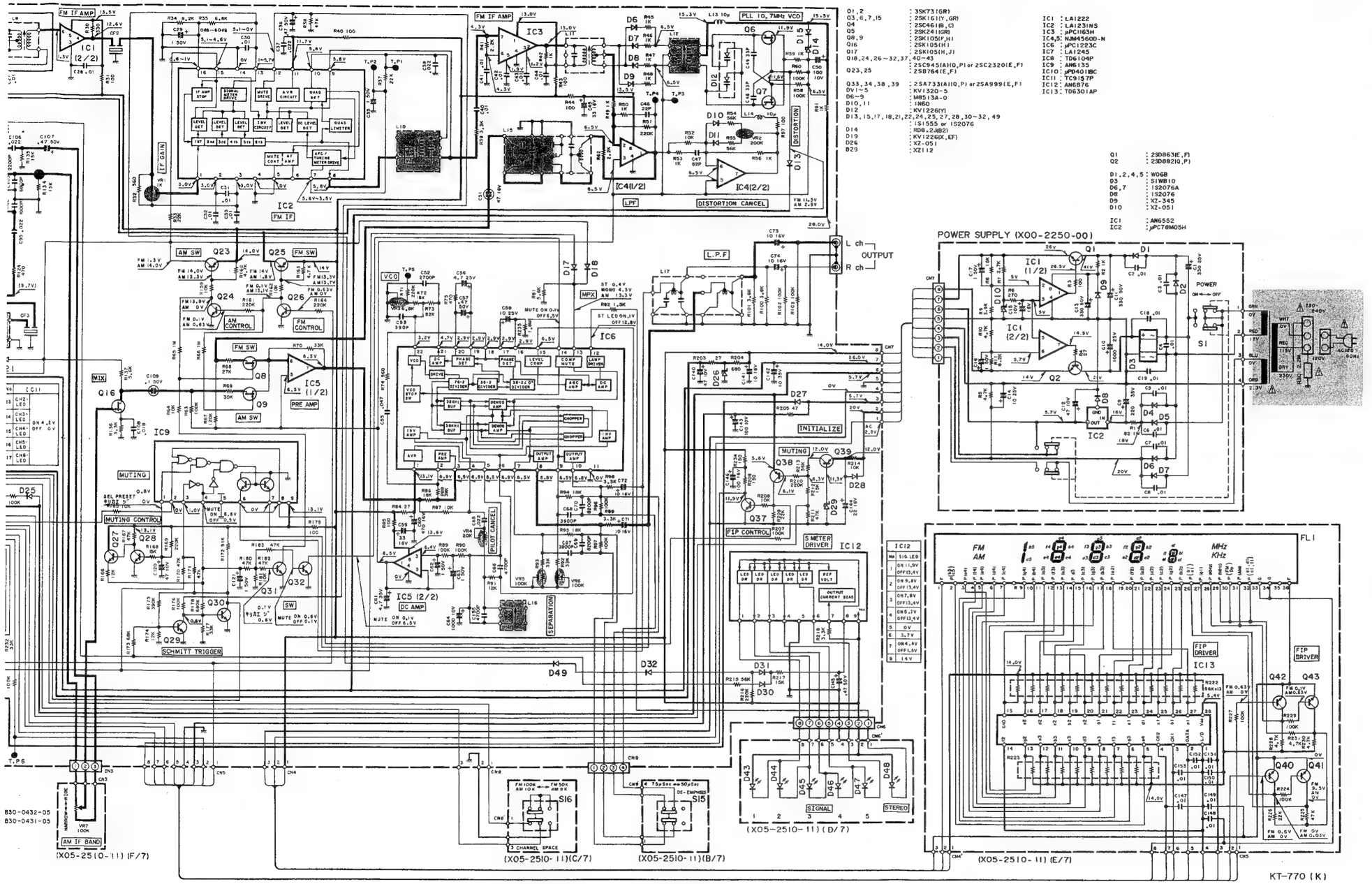

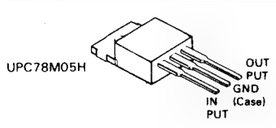

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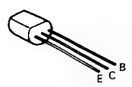
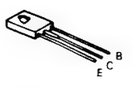
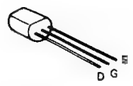
2SA733 (A)
2SA999
2SB764
2SC2320
2SC461
2SC945 (A)
2SD863



2SD882



2SK105
2SK163



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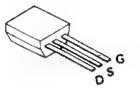

2SK161
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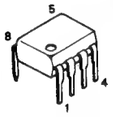

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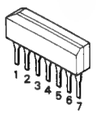
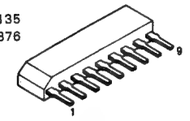


TD6104P
TD6301AP



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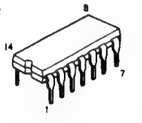
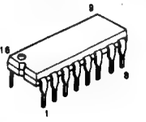


UPD4011BC



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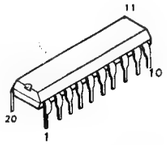
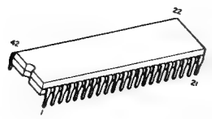


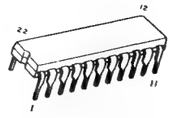
LA1245

UPC1163H

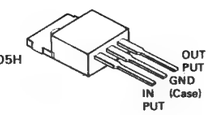
AN6552



TC9157P



UPC1223C



UPC78M05H

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ponents only with manufacturer's recommended parts (
to parts list). ⚠ Indicates safety critical componen
reduce the risk of electric shock, leakage-current or resis

QUARTZ SYNTHESIZER TUNER

KT-770L

SPECIFICATIONS

FM tuner section

Sensitivity at 75 ohms
- **Mono: S/N 26 dB, 40 kHz Dev** ..... 0.7 μV
- **Stereo: S/N 46 dB, 46 kHz Dev** ..... 26 μV

Limiting Level
- **−3 dB, Point, 40 kHz Dev** ..... 0.45 μV

Frequency Response ..... 20 Hz ~ 15 kHz ±0.5 dB

Total Harmonic Distortion
- **Mono: 1 kHz, 40 kHz Dev** 0.1%
- **Stereo: 1 kHz, 46 kHz Dev** 0.38%

S/N Weighted (IEC-A)
- **Mono: 40 kHz Dev., 1 mV input** ..... 74 dB
- **Stereo: 46 kHz Dev., 1 mV input** ..... 66 dB

S/N Ratio (IHF)
- **Mono: 75 kHz Dev., 1 mV input** ..... 80 dB
- **Stereo: 75 kHz Dev., 1 mV input** ..... 70 μV

FM Stereo Separation: 1 mV Input (DIN)
- **250 Hz:** ..... 46 dB
- **1 kHz** ..... 48 dB
- **6.3 kHz** ..... 44 dB
- **12.5 kHz** ..... 32 dB

Image Rejection Ratio ..... 82 dB

Selectivity
- **300 kHz, 20 dB input** ..... 85 dB

IF Rejection Ratio ..... 110 dB

AM Suppression Ratio ..... 70 dB

Spurious Rejetion Ratio ..... 100 dB

Capture Ratio ..... 2.5 dB

MW tuner section

Sensitivity S/N 20 dB ..... 10 μV

S/N Ratio: 1 mV Input ..... 52 dB

Image Rejection Ratio ..... 40 dB

LW tuner section

Sensitivity S/N 20 dB ..... 10 μV

S/N Ratio: 1 mV Input ..... 52 dB

Image Rejection Ratio ..... 70 dB

General

Power Consumption
- **IEC** ..... 12 W

Dimensions (W × H × D) ..... 420 × 64 × 317 mm

Weight (Net) ..... 3.4 kg

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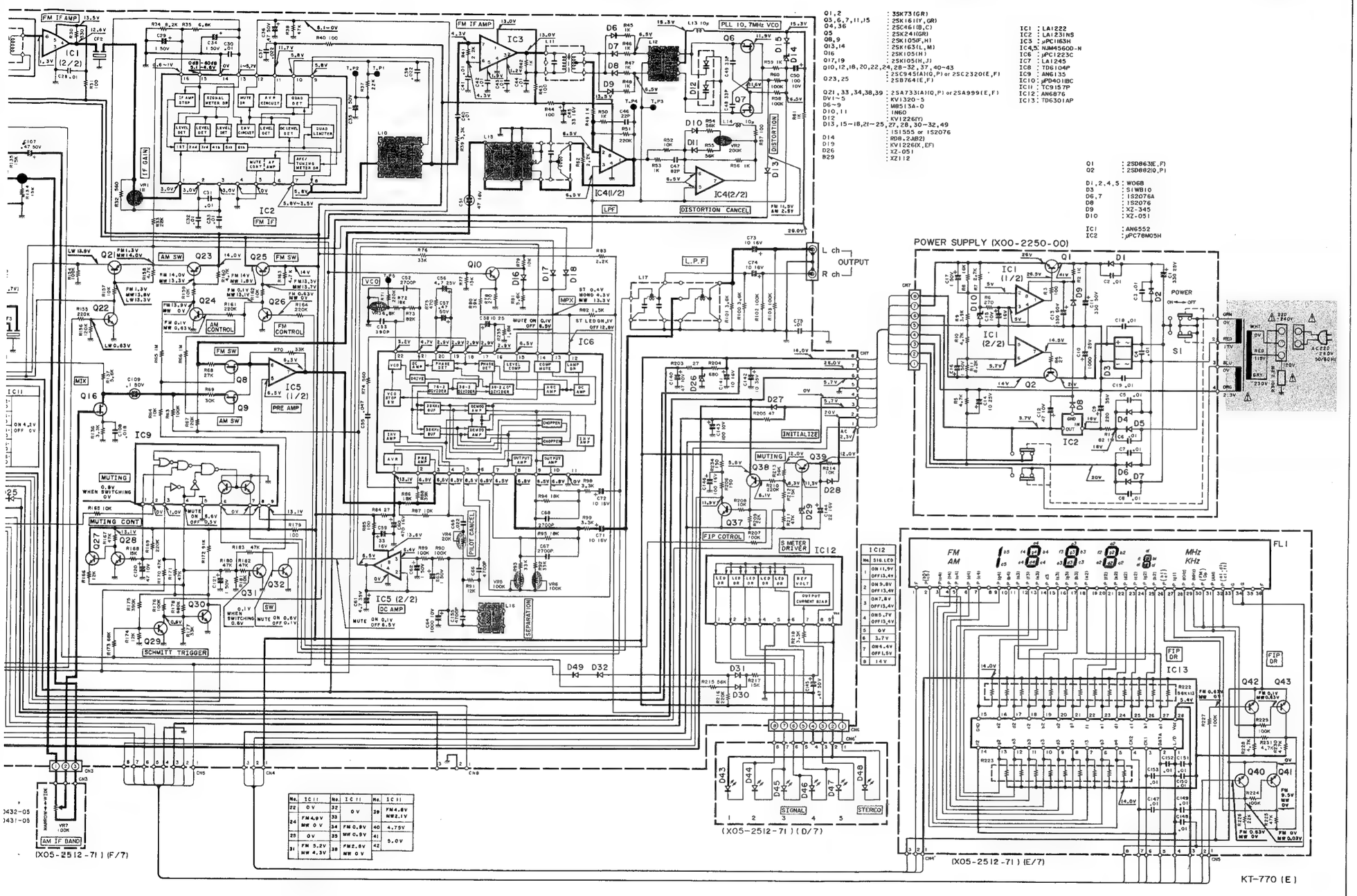

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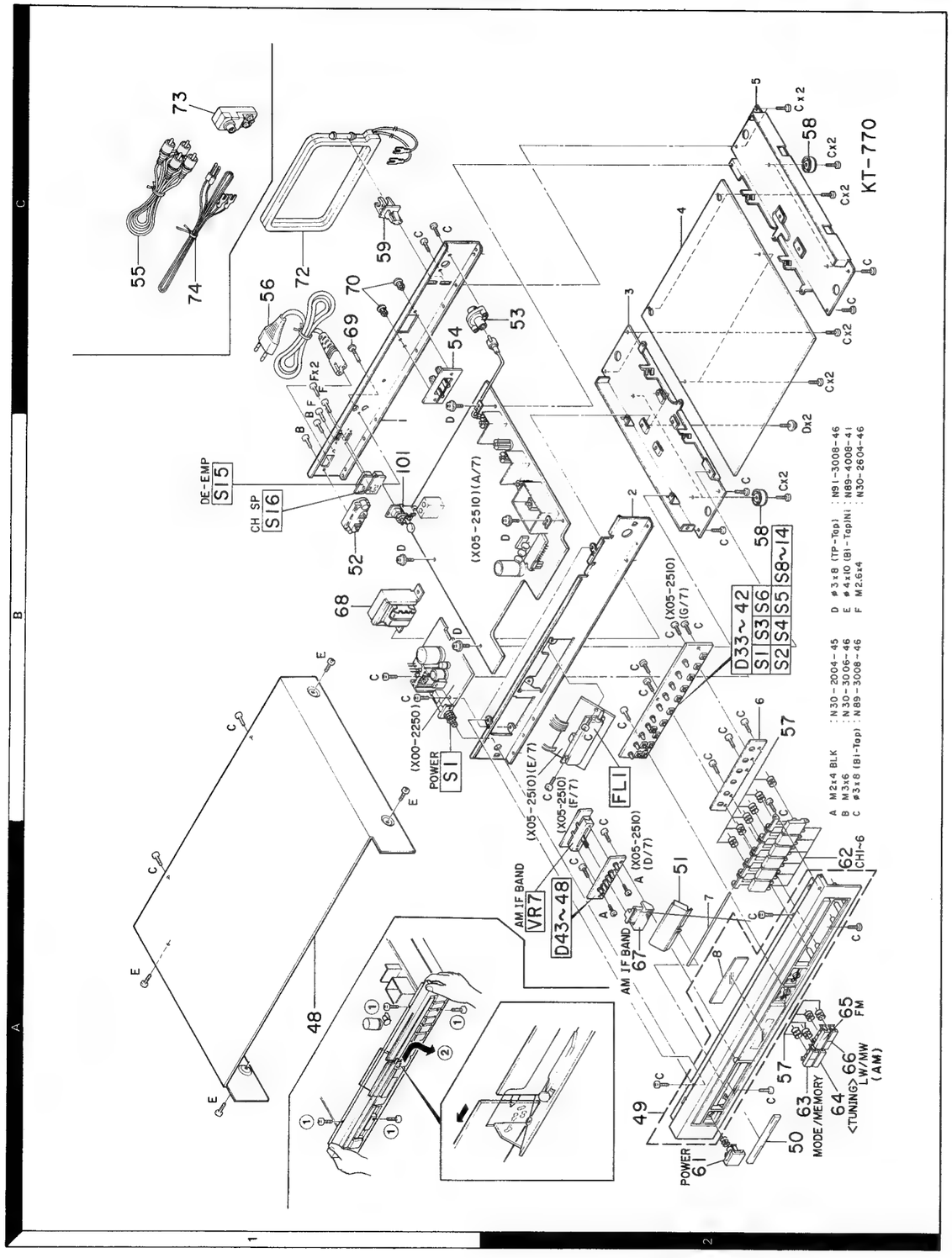
EXPLODED VIEW



PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
				KT-770/770L			
	48	1A	*	A01-0644-03	METALLIC CABINET		
	49	2A	*	A20-3544-03	PANEL ASSY	KPUM	
	49	2A	*	A20-3544-03	PANEL ASSY	UEX	
	49	2A	*	A20-3545-03	PANEL ASSY	T	
	49	2A	*	A20-3658-03	PANEL ASSY	E	
	50	2A	*	B03-0299-04	DRESSING PLATE		
	51	2A	*	B03-0300-04	DRESSING PLATE		
	-			B46-0092-03	WARRANTY CARD	K	
	-			B46-0093-03	WARRANTY CARD	P	
	-			B46-0094-03	WARRANTY CARD	UUE	
	-			B46-0095-03	WARRANTY CARD	UUE	
	-			B46-0096-03	WARRANTY CARD	X	
	-			B46-0097-03	WARRANTY CARD	T	
	-			B46-0098-03	WARRANTY CARD	E	
	-		*	B50-4874-00	INSTRUCTION MANUAL(ENGLISH)	KPUM	
	-		*	B50-4874-00	INSTRUCTION MANUAL(ENGLISH)	UEX	
	-		*	B50-4875-00	INSTRUCTION MANUAL(FRENCH)	PMX	
	-		*	B50-4876-00	INSTRUCTION MANUAL(SPANISH)	M	
	-		*	B50-4877-00	INSTRUCTION MANUAL(ENGLISH)	T	
	-		*	B50-4878-00	INSTRUCTION MANUAL(F,G,D,SW,I)	E	
⚠	52	1B		E03-0102-15	AC INLET		
	53	2C		E04-0006-05	RF COAXIAL CABLE RECEPTACLE		
	54	1C		E20-0228-05	SCREW TERMINAL BOARD (ANTENNA)		
	55	1C		E30-0505-05	AUDIO CORD		
⚠	56	1C		E30-0687-05	AC POWER CORD (INLET)	KP	
⚠	56	1C		E30-1305-15	AC POWER CORD (INLET)	UMUE	
⚠	56	1C		E30-1328-15	AC POWER CORD (INLET)	T	
⚠	56	1C		E30-1329-05	AC POWER CORD (INLET)	E	
⚠	56	1C		E30-1342-05	AC POWER CORD (INLET)	X	
	57	2B	*	G01-1377-04	COMPRESSION SPRING(KNOB)		
	-		*	H01-4798-04	ITEM CARTON CASE	KPUM	
	-		*	H01-4798-04	ITEM CARTON CASE	UEX	
	-		*	H01-4856-04	ITEM CARTON CASE	T	
	-		*	H01-4862-04	ITEM CARTON CASE	E	
	-		*	H10-1671-13	POLYSTYRENE FOAMED FIXTURE		
	-			H20-0452-04	PROTECTION COVER(450X230X350)		
	-			H25-0078-04	PROTECTION BAG (235X315)		
	-			H25-0181-04	PROTECTION BAG (150X260X0.05)		
	58	1B,1C		J02-0130-05	FOOT		
	59	1C		J19-0626-12	ANTENNA HOLDER		
	-			J61-0307-05	WIRE BAND		
	61	2A	*	K27-1000-04	KNOB (BUTTON) POWER		
	62	2A	*	K27-1001-03	KNOB (BUTTON) CH1-6		
	63	2A	*	K27-1007-03	KNOB (BUTTON) MODE/MEMORY		
	64	2A	*	K27-1008-03	KNOB (BUTTON) TUNING		
	65	2A	*	K27-1009-03	KNOB (BUTTON) FM		
	66	2A	*	K27-1010-03	KNOB (BUTTON) AM	KPUM	
	66	2A	*	K27-1010-03	KNOB (BUTTON) AM	UEX	
	66	2A	*	K27-1011-03	KNOB (BUTTON) LW/MW	TE	
	67	2A	*	K27-1012-04	KNOB (LEVER) AM IF BAND		
⚠	68	1B	*	L01-3144-05	POWER TRANSFORMER		

E: Scandinavia & Europe H:Audio Club K: USA P: Canada ⚠ indicates safety critical components.
S: South Africa T: England U: PX(Far East, Hawaii)
UE : AAFES(Europe) X: Australia M: Other Areas

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69	1C		N09-0399-15	STEPPED SCREW (3X19,BI)			KPTE	
70	1C		N29-0035-05	PUSH RIVET				
⚠ R301			R92-0173-05	RC	2.2M	M 2H	KP	
72	1C		T90-0111-15	LOOP ANTENNA				
73	1C		T90-0122-05	ANTENNA ADAPTOR				
74	1C		T90-0132-05	T TYPE ANTENNA				
POWER SUPPLY UNIT (X00-2250-00)								
C1		*	CE04FW1E331M	ELECTRO	330UF	25WV		
C2 -8			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C9		*	CE04FW1V221M	ELECTRO	220UF	35WV		
C10			CE04FW1E102M	ELECTRO	1000UF	25WV		
C11			CE04FW1H331M	ELECTRO	330UF	50WV		
C12			CE04FW1A470M	ELECTRO	47UF	10WV		
C13			CE04W1H331M	ELECTRO	330UF	50WV		
C14			CE04FW1E100M	ELECTRO	10UF	25WV		
C15			CE04FW1C100M	ELECTRO	10UF	16WV		
C16 ,17			CE04FW1H010M	ELECTRO	1UF	50WV		
C18 ,19			CK45FF1H103Z	CERAMIC	0.01UF	Z		
R1			RS14GB3A820J	FL-PROOF RS	82	J 3A		
R2			RD14GB2E102J	FL-PROOF RD	1K	J 2E		
S1	1B	*	S40-4053-05	PUSH SWITCH	(POWER)			
D1 ,2			W06B	DIODE				
D3			S1WB10	DIODE				
D4 ,5			W06B	DIODE				
D6 ,7			1S2076A	DIODE				
D8			1S2076	DIODE				
D9		*	RD36E(B3)	ZENER DIODE				
D10			RD5.1E(B3)	ZENER DIODE				
IC1			AN6552	IC				
IC2			UPC78M05H	IC (VOLTAGE REGULATOR) +5V				
Q1			2SD863(E,F)	TRANSISTOR				
Q2			2SD882(Q,P)	TRANSISTOR				
TUNER UNIT (X05-2510-11)								
D33			B30-0432-05	LED(LN31GCPH(U))	MODE			
D34			B30-0431-05	LED(LN21CPH)	MEMORY			
D35 ,36			B30-0431-05	LED(LN21CPH)	LW,MW		TE	
D37 -42			B30-0431-05	LED(LN21CPH)	CH1-6			
D43 -47			B30-0432-05	LED(LN31GCPH(U))	SIGNAL			
D48			B30-0431-05	LED(LN21CPH)	STEREO			
C1			CC45FSL1H070D	CERAMIC	7.0PF	D		
C2			CC45FSL1H390J	CERAMIC	39PF	J		
C3		*	CC45FTH1H050C	CERAMIC	5PF	C		
C4			CC45FSL1H070D	CERAMIC	7.0PF	D		
C5 ,6			CK45FB1H102K	CERAMIC	0.001UF	K		
C7		*	CC45FTH1H070D	CERAMIC	7.0PF	D		
C8		*	CC45FTH1H030C	CERAMIC	3.0PF	C		
C9			CC45FSL1H100D	CERAMIC	10PF	D		
C10			CC45FSL1H070D	CERAMIC	7.0PF	D		
C11			CC45FSL1H221J	CERAMIC	220PF	J		
C12 -14			CK45FF1H103Z	CERAMIC	0.01UF	Z		

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C15		*	CC45FTH1H050C	CERAMIC	5PF	C		
C16			CC45FSL1H070D	CERAMIC	7.0PF	D		
C17			CC45FSL1H040C	CERAMIC	4.0PF	C		
C18		*	CC45FTH1H050C	CERAMIC	5PF	C		
C19		*	CC45FTH1H080D	CERAMIC	8PF	D		
C20			CK14D1H102M	CERAMIC	1000PF	M		
C21			CC45FSL1H150J	CERAMIC	15PF	J		
C22			CC45FSL1H330J	CERAMIC	33PF	J		
C23			CC45FSL1H100D	CERAMIC	10PF	D		
C24			CC45FSL1H101J	CERAMIC	100PF	J		
C25			CE04FW1C471M	ELECTRO	470UF	16WV		
C26 -28			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C29			CE04FW1H010M	ELECTRO	1UF	50WV		
C30 ,31			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C32			C91-0083-05	CERAMIC	0.01UF	N		
C33			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C34 ,35			CE04FW1H010M	ELECTRO	1UF	50WV	TE	
C35			CE04FW1H010M	ELECTRO	1UF	50WV	KPUM	
C35			CE04FW1H010M	ELECTRO	1UF	50WV	UEX	
C36			CE04FW1HR47M	ELECTRO	0.47UF	50WV		
C37			C91-0085-05	CERAMIC	0.022UF	N		
C39			C91-0085-05	CERAMIC	0.022UF	N		
C40 -44			C91-0083-05	CERAMIC	0.01UF	N		
C45			CE04FW1C330M	ELECTRO	33UF	16WV		
C46			CC45FSL1H220J	CERAMIC	22PF	J		
C47			CC45FSL1H820J	CERAMIC	82PF	J		
C48 ,49			CC45FCH1H330J	CERAMIC	33PF	J		
C50			CE04FW1A101M	ELECTRO	100UF	10WV		
C51		*	CE04HW1C470M	NP-ELEC	47UF	16WV		
C52			CQ93FM1H272K	MYLAR	0.0027UF	K		
C53			CQ09FS1H391J	POLYSTY	390PF	J		
C55			CQ93FM1H473K	MYLAR	0.047UF	K		
C56			CE04GW1E4R7M	LL-ELEC	4.7UF	25WV		
C57			CE04GW1HR47M	LL-ELEC	0.47UF	50WV		
C58			CE04GW1E100M	LL-ELEC	10UF	25WV		
C59			CE04FW1C330M	ELECTRO	33UF	16WV		
C60			CE04FW1C471M	ELECTRO	470UF	16WV		
C61			CE04FW1V4R7M	ELECTRO	4.7UF	35WV		
C62 ,63			CE04FW1H010M	ELECTRO	1UF	50WV		
C64			CE04FW1A102M	ELECTRO	1000UF	10WV		
C65			CF92FV1H223J	MF	0.022UF	J		
C66			CQ93FM1H472K	MYLAR	0.0047UF	K		
C67 ,68			CQ93FM1H272J	MYLAR	2700PF	J	TE	
C67 ,68			CQ93FM1H392J	MYLAR	3900PF	J	KPUM	
C67 ,68			CQ93FM1H392J	MYLAR	3900PF	J	UEX	
C69 ,70			CQ93FM1H822J	MYLAR	8200PF	J	KPUM	
C69 ,70			CQ93FM1H822J	MYLAR	8200PF	J	UEX	
C71 -74			CE04FW1C100M	ELECTRO	10UF	16WV		
C75			CK45F1H103Z	CERAMIC	0.01UF	Z	TE	
C77			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C78			CC45FSL1H150J	CERAMIC	15PF	J	TE	
C79 -81			CK45FF1H223Z	CERAMIC	0.022UF	Z	TE	
C82			CC45FSL1H101J	CERAMIC	100PF	J		
C83 ,84			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C85			CQ09FS1H121J	POLYSTY	120PF	J	TE	

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C86		*	CC45FCH1H390J	CERAMIC	39PF	J	TE	
C87			CQ09FS1H391J	POLYSTY	390PF	J		
C88			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C89		*	CC45FUJ1HD70D	CERAMIC	7.0PF	D		
C90			CK14D1H102M	CERAMIC	1000PF	M		
C91 -93			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C94			CE04FW1C100M	ELECTRO	10UF	16WV		
C95			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C96			C91-0083-05	CERAMIC	0.01UF	N		
C97			CE04FW1C101M	ELECTRO	100UF	16WV		
C98			CE04FW1H3R3M	ELECTRO	3.3UF	50WV		
C99			CE04FW1V4R7M	ELECTRO	4.7UF	35WV		
C100			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C101			CQ93FM1H103K	MYLAR	0.01UF	K		
C102			CK45FB1H102K	CERAMIC	0.001UF	K		
C103			CQ93FM1H682K	MYLAR	0.0068UF	K		
C104			CQ93FM1H222K	MYLAR	2200PF	K		
C105			CE04FW1HR47M	ELECTRO	0.47UF	50WV		
C106			CF92FV1H223J	MF	0.022UF	J		
C107			CE04FW1HR47M	ELECTRO	0.47UF	50WV		
C108			CQ93FM1H183K	MYLAR	0.018UF	K		
C109		*	CE04HW1H0R1M	NP-ELEC	0.1UF	50WV		
C110			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C111			CE04HW1HR47M	NP-ELEC	0.47UF	50WV		
C112			CE04GW1H010M	LL-ELEC	1.0UF	50WV		
C113			CE04FW1V330M	ELECTRO	33UF	35WV		
C114			CK45FF1H223Z	CERAMIC	0.022UF	Z	TE	
C115			CE04HW1HR47M	NP-ELEC	0.47UF	50WV	TE	
C116			CE04GW1H010M	LL-ELEC	1.0UF	50WV	TE	
C117			CK45FB1H222K	CERAMIC	2200PF	K		
C118,119			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C120			CE04FW1A470M	ELECTRO	47UF	10WV		
C121			CE04FW1H010M	ELECTRO	1UF	50WV		
C122			CK45FB1H102K	CERAMIC	0.001UF	K		
C123			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C124,125			CE04FW1V4R7M	ELECTRO	4.7UF	35WV		
C126		*	CC45FTH1H120J	CERAMIC	12PF	J	TE	
C127			CC45FSL1H221J	CERAMIC	220PF	J	TE	
C128			CC45FSL1H101J	CERAMIC	100PF	J	TE	
C129			CK45FF1H223Z	CERAMIC	0.022UF	Z	TE	
C130			CK45FF1H103Z	CERAMIC	0.01UF	Z	TE	
C131		*	CE04FW0J222M	ELECTRO	2200UF	6.3WV		
C132			CK45FF1H223Z	CERAMIC	0.022UF	Z		
C133			CK45FF1H103Z	CERAMIC	0.01UF	Z		
C134,135			CC45FCH1H330J	CERAMIC	33PF	J	KPUM	
C134,135			CC45FCH1H330J	CERAMIC	33PF	J	UEX	
C136		*	R90-0544-05	MULTI-CO				
C137			C91-0083-05	CERAMIC	0.01UF	N		
C138,139			CE04FW1H2R2M	ELECTRO	2.2UF	50WV		
C140			CE04FW1A470M	ELECTRO	47UF	10WV		
C141			CE04FW1C100M	ELECTRO	10UF	16WV		
C142			CE04FW1V100M	ELECTRO	10UF	35WV		
C143			CE04FW1A101M	ELECTRO	100UF	10WV		
C144			CE04FW1C220M	ELECTRO	22UF	16WV		
C145			CE04FW1HR47M	ELECTRO	0.47UF	50WV		

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C146			CE04FW1C101M	ELECTRO 100UF 16WV		
C147-152			CK45FF1H103Z	CERAMIC 0.01UF Z		
C153			C91-0083-05	CERAMIC 0.01UF N		
C154			CK45FF1H103Z	CERAMIC 0.01UF Z		
C155			CQ93FM1H472K	MYLAR 0.0047UF K		
CT1 -4			C05-0302-05	CERAMIC TRIM CAPACITOR (11PF)		
CT5			C05-0301-05	CERAMIC TRIM CAPACITOR (7PF)		
CT6			C05-0303-05	CERAMIC TRIM CAPACITOR (20PF)	KPUM	
CT7 ,8			C05-0303-05	CERAMIC TRIM CAPACITOR (20PF)	TE	
CT9			C05-0302-05	CERAMIC TRIM CAPACITOR (11PF)		
CT10		*	C05-0093-05	CERAMIC TRIM CAPACITOR (10PF)	TE	
101	1B		E13-0217-05	PHONO JACK		
-			E23-0125-05	TERMINAL (GND PLATE)		
CF1			L72-0195-05	CERAMIC FILTER (MJGH15-A)	TE	
CF1		*	L72-0505-05	CERAMIC FILTER (MP3H15-A)	KPUM	
CF1		*	L72-0505-05	CERAMIC FILTER (MP3H15-A)	UEX	
CF2			L72-0185-05	CERAMIC FILTER (MXH15-A)	KPUM	
CF2			L72-0185-05	CERAMIC FILTER (MXH15-A)	UEX	
CF2			L72-0190-05	CERAMIC FILTER (MS3GH15-A)	TE	
CF3			L72-0097-05	CERAMIC FILTER		
CF4			L72-0096-05	CERAMIC FILTER		
L1		*	L31-0495-05	FM-RF COIL		
L2			L31-0492-05	FM-RF COIL		
L3		*	L31-0495-05	FM-RF COIL		
L4			L40-1092-14	SMALL FIXED INDUCTOR (1.0UH,M)		
L5			L30-0247-05	FM IFT		
L6 ,7			L32-0270-05	FM OSCILLATING COIL		
L8			L30-0282-05	FM IFT		
L10			L30-0361-15	FM IFT		
L11			L30-0341-05	FM IFT		
L12			L32-0275-05	FM OSCILLATING COIL		
L13 ,14		*	L40-1001-14	SMALL FIXED INDUCTOR (10UH,K)		
L15			L79-0162-05	LC FILTER (LPF)		
L16			L35-0059-05	MPX COIL		
L17			L79-0101-05	LC FILTER (LPF)		
L18			L40-1092-14	SMALL FIXED INDUCTOR (1.0UH,M)		
L19			L31-0472-05	MW-RF COIL		
L20			L31-0479-05	LW-RF COIL	TE	
L21			L32-0278-05	LW OSCILLATING COIL	TE	
L22			L79-0074-05	LC FILTER (LPF)	TE	
L23			L32-0277-15	MW OSCILLATING COIL		
L24			L30-0337-05	AM IFT		
X1			L77-0578-05	CRYSTAL RESONATOR (7.2MHZ)	TE	
X2			L77-0578-05	CRYSTAL RESONATOR (7.2MHZ)	KPUM	
X2			L77-0578-05	CRYSTAL RESONATOR (7.2MHZ)	UEX	
R2			RC05GF2H185M	RC 1.8M M 2H	KPUM	
R2			RC05GF2H185M	RC 1.8M M 2H	UEX	
R26			RD14GB2E270J	FL-PROOF RD 27 J 2E		
R28			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R31			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R40			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R43 ,44			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R72		*	RN14BK2E1802G	RN 18 2 2E		

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R84			RD14GB2E270J	FL-PROOF RD 27 J 2E		
R85			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R123			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R128			RD14GB2E270J	FL-PROOF RD 27 J 2E		
R138			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R179			RD14GB2E101J	FL-PROOF RD 100 J 2E		
R195			RD14GB2E101J	FL-PROOF RD 100 J 2E	TE	
R205			RD14GB2E470J	FL-PROOF RD 47 J 2E		
R222		*	R90-0245-05	MULTI-COMP 56K X13		
R223		*	R90-0246-05	MULTI-COMP		
VR1			R12-1312-05	TRIMMING POT(1K) IF GAIN		
VR2			R12-5310-05	TRIMMING POT(200K) DISTORTION		
VR3			R12-2024-05	TRIMMING POT(6.8K) VCO		
VR4			R12-3313-05	TRIMMING POT(20K) PILOT SIG		
VR5 ,6			R12-5309-05	TRIMMING POT(100K) SEPARATION		
VR7		*	R13-5041-05	VARIABLE RESISTOR AM IF BAND		
S1 -4			S40-1068-05	PUSH SWITCH (MODE,MEM,TUNING)		
S5 ,6			S40-1068-05	PUSH SWITCH (LW,FM)	TE	
S6 ,7			S40-1068-05	PUSH SWITCH (FM,AM)	KPUM	
S6 ,7			S40-1068-05	PUSH SWITCH (FM,AM)	UEX	
S8			S40-1068-05	PUSH SWITCH (MW)	TE	
S9 -14			S40-1068-05	PUSH SWITCH (M1-6)		
S15 ,16			S31-2072-05	SLIDE SWITCH(DE-EMPH,CH SPACE)	KPUM	
S15 ,16			S31-2072-05	SLIDE SWITCH(DE-EMPH,CH SPACE)	UEX	
D6 -9			M8513A-0	VARISTOR		
D10 ,11			1N60	DIODE		
D12			KV1226(Y)	VARIABLE CAPACITANCE DIODE		
D13			1S1555	DIODE		
D13			1S2076	DIODE		
D14			RD8.2J(B2)	ZENER DIODE		
D15			1S1555	DIODE	KPUM	
D15			1S1555	DIODE	UEX	
D15			1S2076	DIODE	KPUM	
D15			1S2076	DIODE	UEX	
D15 -18			1S1555	DIODE	TE	
D15 -18			1S2076	DIODE	TE	
D17 ,18			1S1555	DIODE	KPUM	
D17 ,18			1S1555	DIODE	UEX	
D17 ,18			1S2076	DIODE	KPUM	
D17 ,18			1S2076	DIODE	UEX	
D19			KV1226(EF)	VARIABLE CAPACITANCE DIODE		
D19			KV1226(X)	VARIABLE CAPACITANCE DIODE		
D20			KV1226(EF)	VARIABLE CAPACITANCE DIODE	TE	
D20			KV1226(X)	VARIABLE CAPACITANCE DIODE	TE	
D21 -25			1S1555	DIODE	TE	
D21 -25			1S2076	DIODE	TE	
D21 ,22			1S1555	DIODE	KPUM	
D21 ,22			1S1555	DIODE	UEX	
D21 ,22			1S2076	DIODE	KPUM	
D21 ,22			1S2076	DIODE	UEX	
D24 ,25			1S1555	DIODE	KPUM	
D24 ,25			1S1555	DIODE	UEX	
D24 ,25			1S2076	DIODE	KPUM	
D24 ,25			1S2076	DIODE	UEX	

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D26			RD5.1E(B3)	ZENER DIODE		
D27 ,28			1S1555	DIODE		
D27 ,28			1S2076	DIODE		
D29			RD11E(B3)	ZENER DIODE		
D30 -32			1S1555	DIODE		
D30 -32			1S2076	DIODE		
D49			1S1555	DIODE		
D49			1S2076	DIODE		
DV1 -5			KV1320-5	VARIABLE CAPACITANCE DIODE		
FL1			FIP7B8S	FLUORESCENT INDICATOR TUBE		
IC1			LA1222	IC (OP AMP)		
IC2			LA1231NS	IC (FM IF SYSTEM)		
IC3			UPC1163H	IC (OP AMP)		
IC4 ,5			NJM4560D-N	IC (OP AMP)		
IC6			UPC1223C	IC (MPX)		
IC7			LA1245	IC (AM)		
IC8			TD6104P	IC (FM PRESCALER)		
IC9			AN6135	IC (MUTING)		
IC10			UPD4011BC	IC (NAND GATE)		
IC11			TC9157P	IC (DIGITAL TUNING SYSTEM)		
IC12			AN6876	IC (S-METER DRIVER)		
IC13			TD6301AP	IC (FIP DRIVER)		
Q1 ,2			3SK73(GR)	FET		
Q3			2SK161(Y,GR)	FET		
Q4		*	2SC461(B,C)	TRANSISTOR		
Q5		*	2SK241(GR)	FET		
Q6 ,7			2SK161(Y,GR)	FET		
Q8 ,9		*	2SK105(F,H)	FET		
Q10			2SC2320(E,F)	TRANSISTOR	TE	
Q10			2SC945(A)(Q,P)	TRANSISTOR	TE	
Q11			2SK161(Y,GR)	FET	TE	
Q12			2SC2320(E,F)	TRANSISTOR	TE	
Q12			2SC945(A)(Q,P)	TRANSISTOR	TE	
Q13 ,14			2SK163(L,M)	FET	TE	
Q15			2SK161(Y,GR)	FET		
Q16			2SK105(H)	FET		
Q17			2SK105(H,J)	FET		
Q18			2SC2320(E,F)	TRANSISTOR		
Q18			2SC945(A)(Q,P)	TRANSISTOR		
Q19			2SK105(H,J)	FET	TE	
Q20			2SC2320(E,F)	TRANSISTOR	TE	
Q20			2SC945(A)(Q,P)	TRANSISTOR	TE	
Q21			2SA733(A)(Q,P)	TRANSISTOR	TE	
Q21			2SA999(E,F)	TRANSISTOR	TE	
Q22			2SC2320(E,F)	TRANSISTOR	TE	
Q22			2SC945(A)(Q,P)	TRANSISTOR	TE	
Q23			2SB764(E,F)	TRANSISTOR		
Q24			2SC2320(E,F)	TRANSISTOR		
Q24			2SC945(A)(Q,P)	TRANSISTOR		
Q25			2SB764(E,F)	TRANSISTOR		
Q26 -32			2SC2320(E,F)	TRANSISTOR		
Q26 -32			2SC945(A)(Q,P)	TRANSISTOR		
Q33 -35			2SA733(A)(Q,P)	TRANSISTOR	TE	
Q33 -35			2SA999(E,F)	TRANSISTOR	TE	
Q33 ,34			2SA733(A)(Q,P)	TRANSISTOR	KPUM	

E: Scandinavia & Europe H:Audio Club K: USA P: Canada
S: South Africa T: England U: PX(Far East, Hawaii)
UE: AAFES(Europe) X: Australia M: Other Areas

PARTS LIST

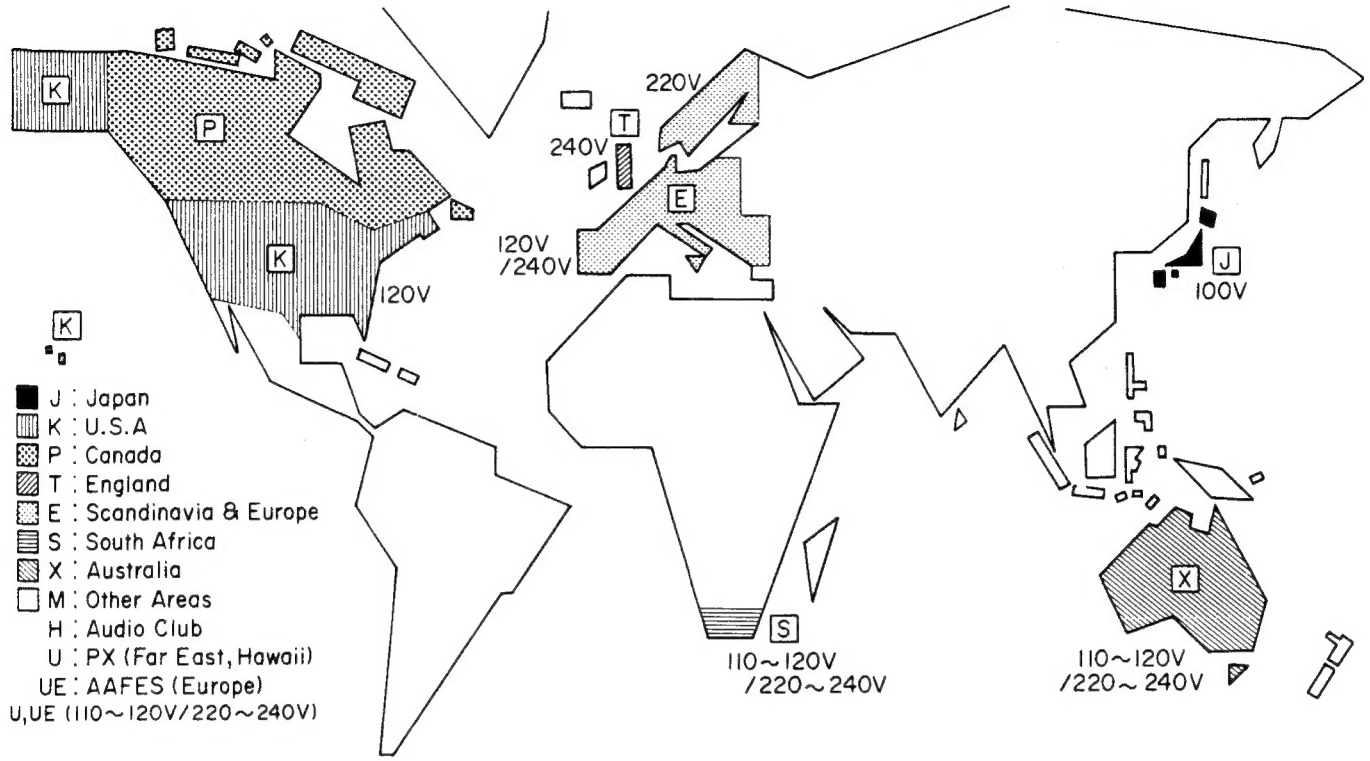
* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
Q33 ,34			2SA733(A)(Q,P)	TRANSISTOR	UEX	
Q33 ,34			2SA999(E,F)	TRANSISTOR	KPUM	
Q33 ,34			2SA999(E,F)	TRANSISTOR	UEX	
Q36		*	2SC461(B,C)	TRANSISTOR	TE	
Q37			2SC2320(E,F)	TRANSISTOR		
Q37			2SC945(A)(Q,P)	TRANSISTOR		
Q38 ,39			2SA733(A)(Q,P)	TRANSISTOR		
Q38 ,39			2SA999(E,F)	TRANSISTOR		
Q40 -43			2SC2320(E,F)	TRANSISTOR		
Q40 -43			2SC945(A)(Q,P)	TRANSISTOR		

E: Scandinavia & Europe H:Audio Club K: USA P: Canada
S: South Africa T: England U: PX(Far East, Hawaii)
UE: AAFES(Europe) X: Australia M: Other Areas

KT-770/L

WORLD MAP & AREA CODE



Note:
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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